

Pioneer

Service Manual



ORDER NO.
ARP3073

DIGITAL CATV CONVERTER

BD-V1100

BD-V1110

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	BD-V1100	BD-V1110		
KUXJ/1	○	–	AC120V	
KU/1	○	–	AC120V	
KUXJ	–	○	AC120V	

- Refer to the “Service Know-how (SKB54005)” for the details about the 6. ADJUSTMENT and 7.1.1 TROUBLESHOOTING.
- Refer to 7.3 (page 68) about the exterior distinction between /KU , /KUXJ , /KUXJ/1 and KU/1 models of BD-V1100.

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

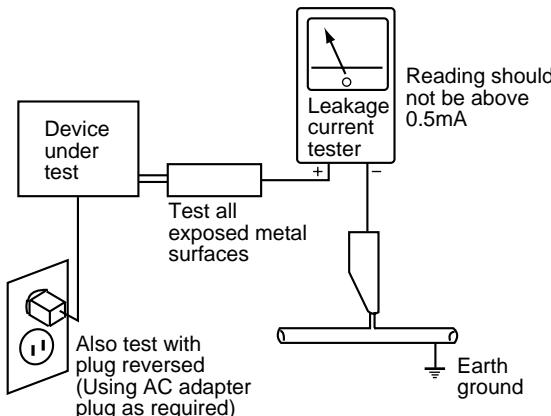
2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.



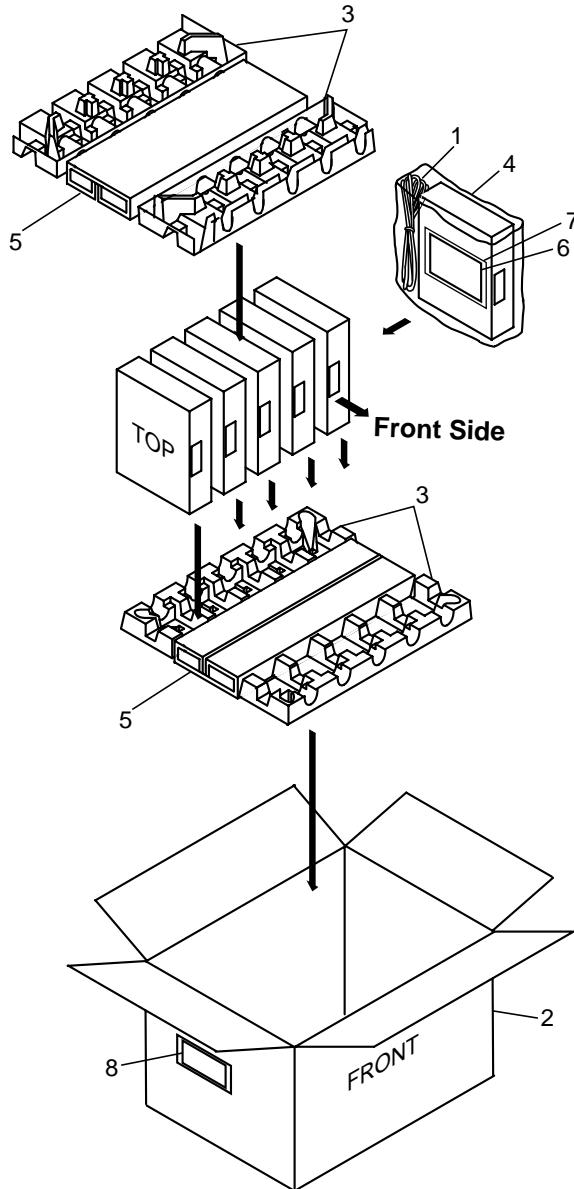
AC Leakage Test

2. EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ∇ mark on the product are used for disassembly.

2.1 PACKING



(1) PACKING PARTS LIST

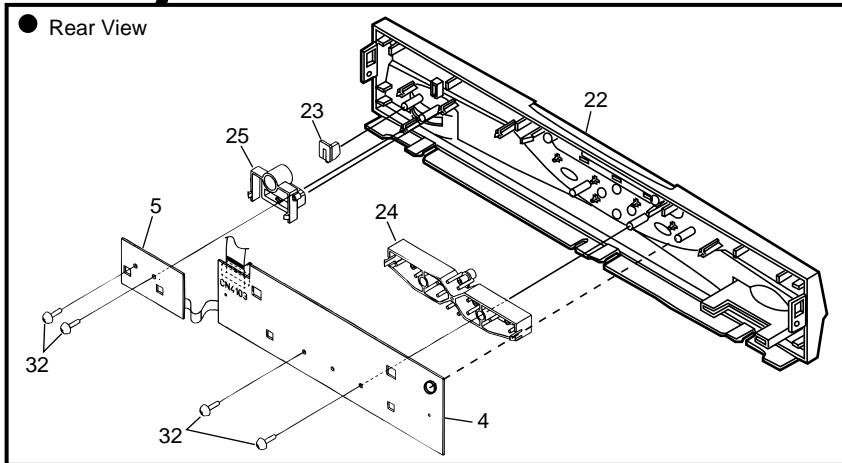
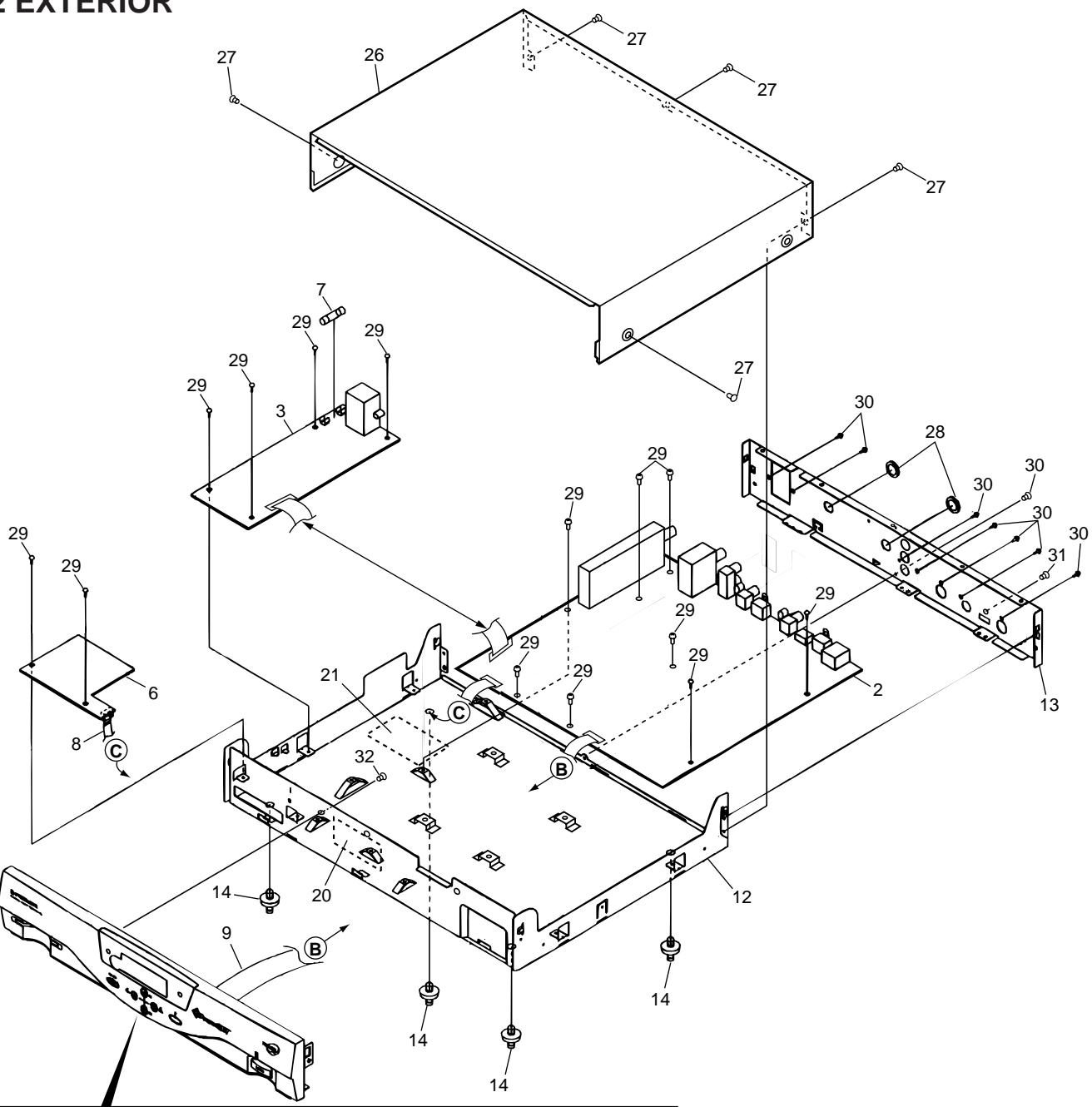
Mark	No.	Description	Part No.
Δ	1	AC Power Cord	See Contrast table(2)
	2	Packing Case	See Contrast table(2)
	3	Pulp Mold	BHX1021
	4	Packing Sheet	BHG1063
	5	Packing Spacer	BHA1150
	6	Operating Instructions (English)	BRB1057
NSP	7	Literature Bag	AHG-117
NSP	8	Bar-code Label	BAL1332

(2) CONTRAST TABLE

BD-V1100/KUXJ/1, /KU/1 and BD-V1110/KUXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			BD-V1100 /KUXJ/1	BD-V1100 /KU/1	BD-V1110 /KUXJ	
Δ	1	AC Power Cord	ADG7022	ADG7021	ADG7022	
	2	Packing Case	BHD1481	BHD1483	BHD1482	

2.2 EXTERIOR



(1) EXTERIOR PARTS LIST

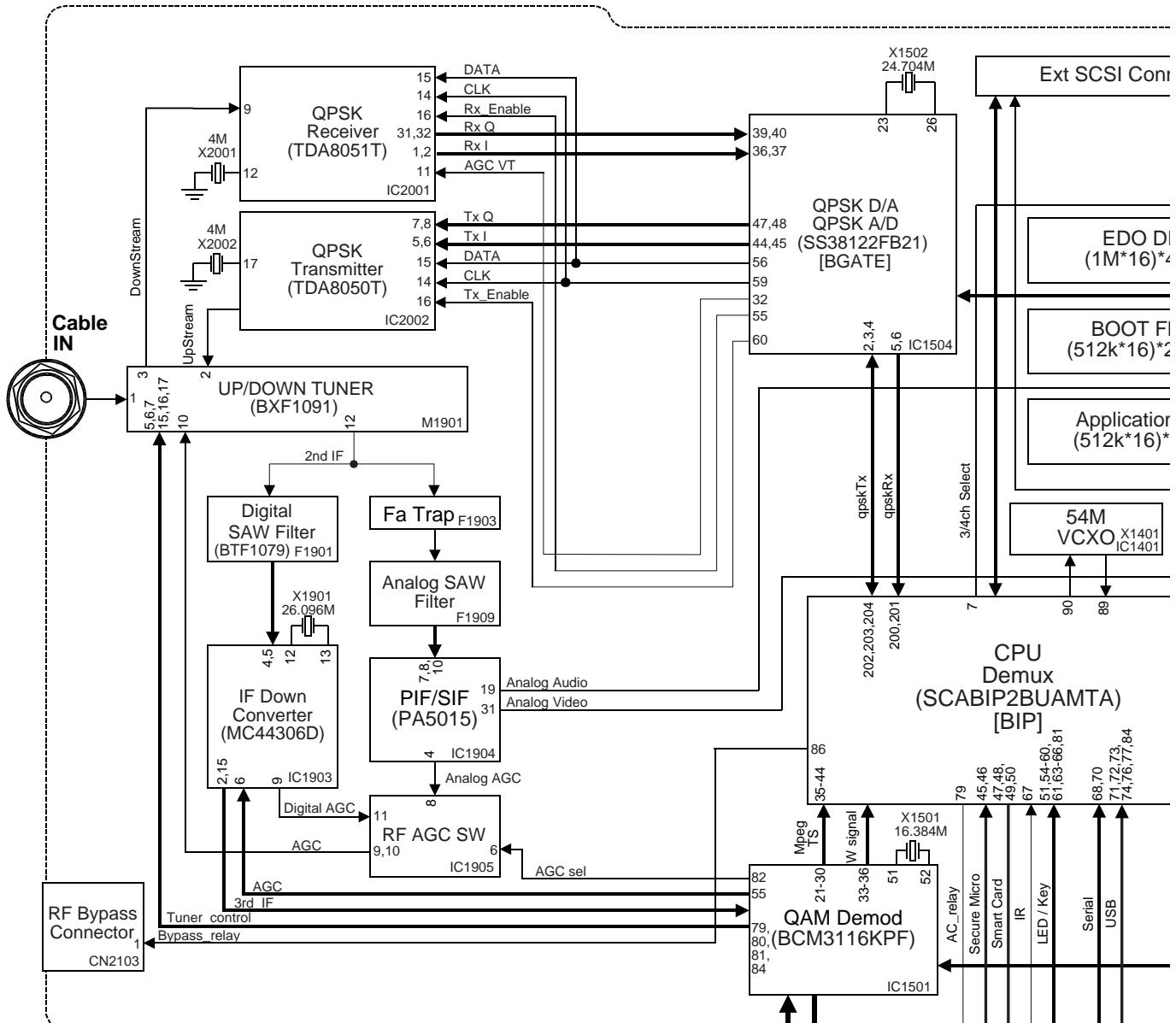
(2) CONTRAST TABLE

BD-V1100/KUXJ/1, /KU/1 and BD-V1110/KUXJ are constructed the same except for the following:

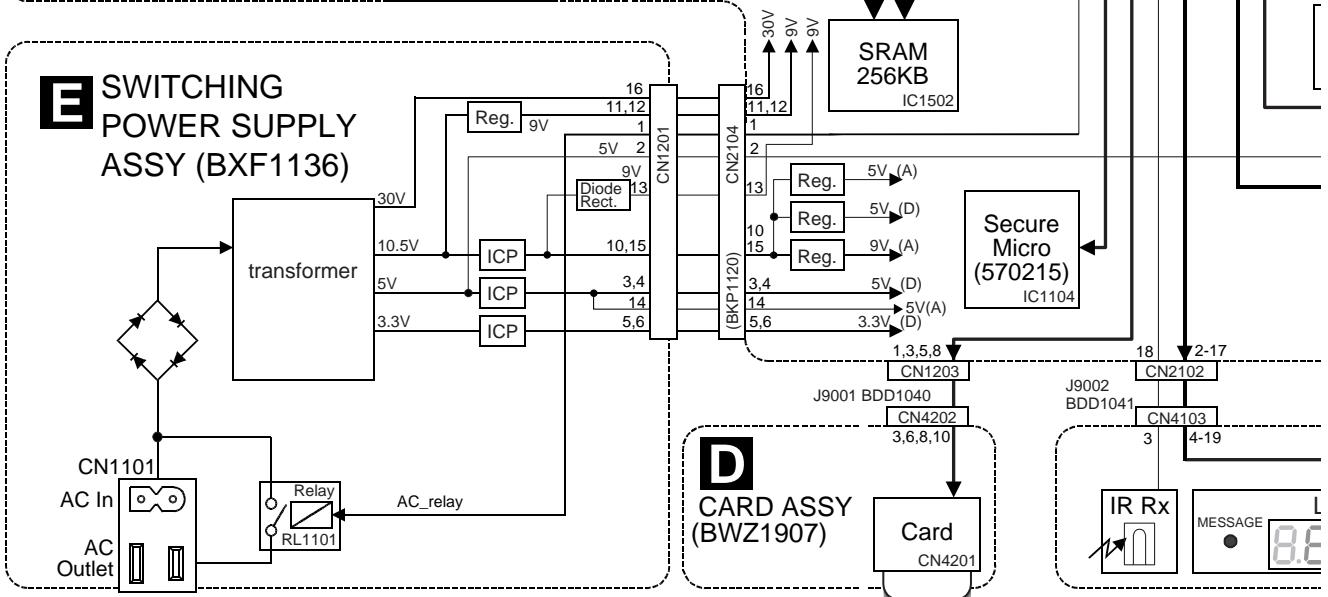
Mark	No.	Symbol and Description	Part No.			Remarks
			BD-V1100 /KUXJ/1	BD-V1100 /KU/1	BD-V1110 /KUXJ	
NSP	4	FRONT PANEL ASSY	BWZ1905	BWZ1910	BWZ1905	
	5	POWER SWITCH ASSY	BWZ1906	BWZ1911	BWZ1906	
	6	CARD ASSY	BWZ1907	BWZ1912	BWZ1907	
	13	Rear Panel	BNC1164	BNC1164	BNC1165	
	21	UPC Label	BAX1277	BAX1278	BAX1279	
	22	Front Panel Assy	BMB1116	BMB1116	BMB1117	
		Name Label	Not used	BAL1399	Not used	

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

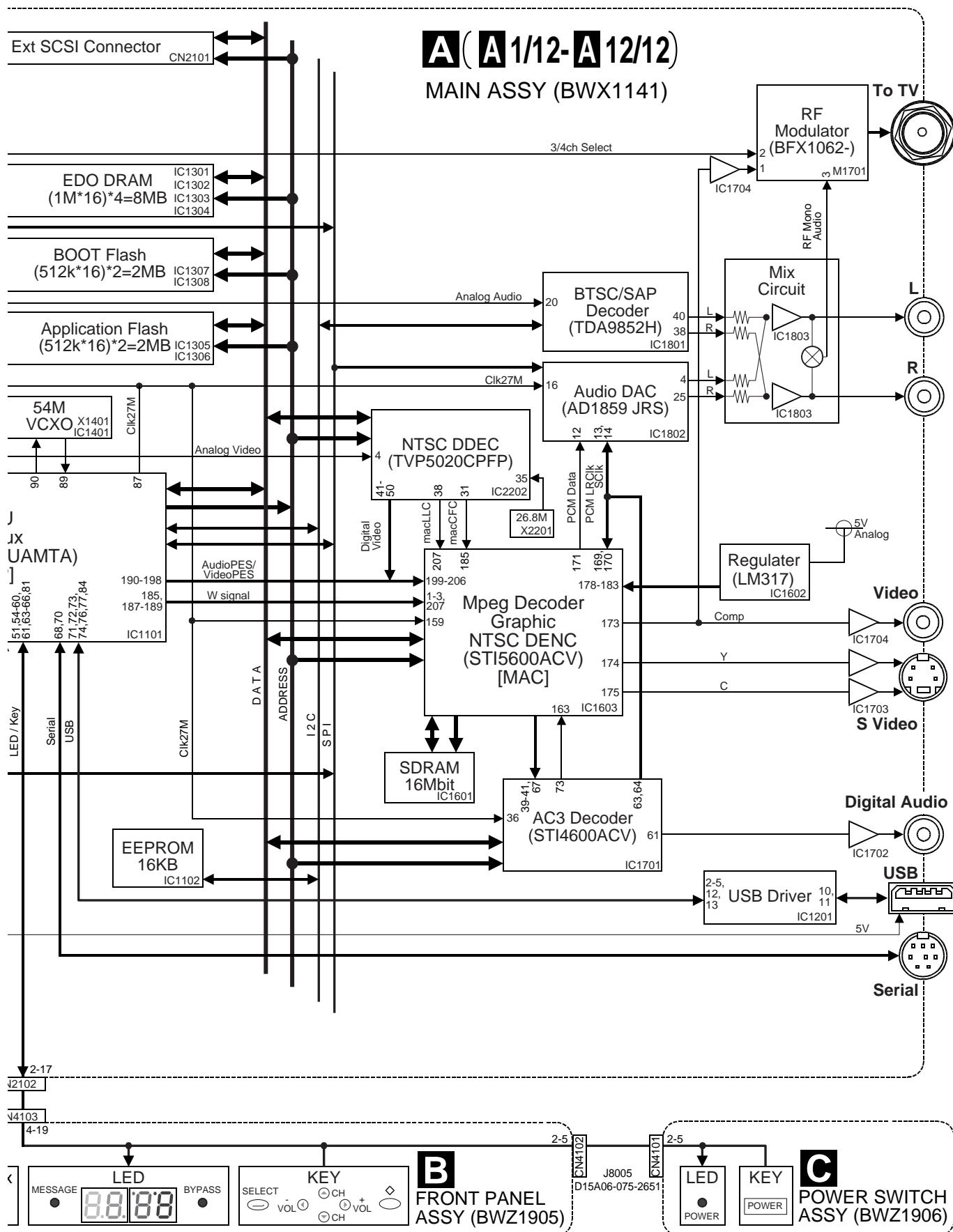


E SWITCHING POWER SUPPLY ASSY (BXF1136)

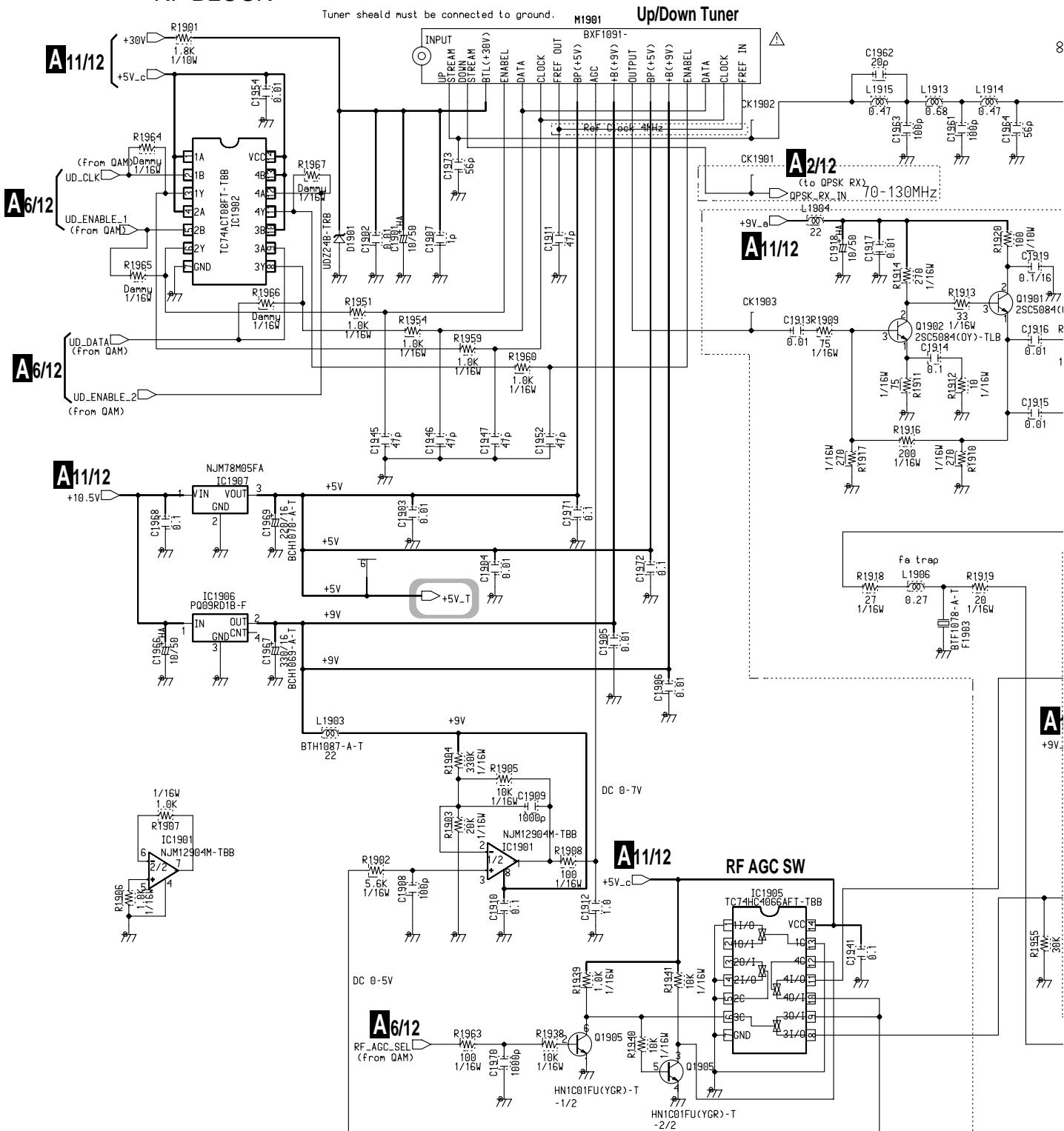


D CARD ASSY (BWZ1907)

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

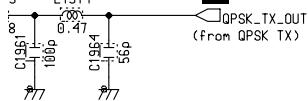


3.2 MAIN ASSY (1/12)

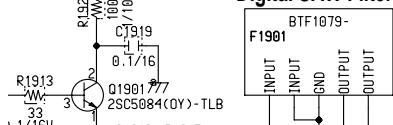
A 1/12 MAIN ASSY (1/12) (BWX1141)
• RF BLOCKBe sure to use parts of identical designation at \triangle mark.**RESISTORS**Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted
K, K₂, M, M₂**CAPACITORS**Indicated in Capacity (F)/VOLTAGE(V) unless otherwise noted. P, PF.
Indication without voltage is 50V except electrolytic capacitor.

 : The power supply is shown with the marked box.

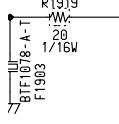
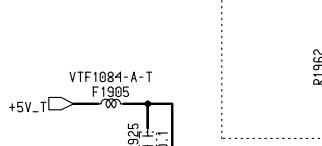
8-27MHz

A2/12

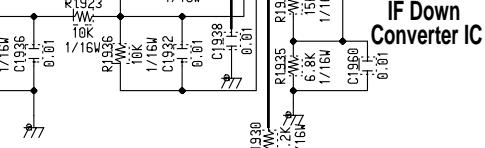
Digital SAW Filter



IF 44MHz

A6/12**A11/12****A6/12**

3rd IF 8.2MHz

**A11/12**

adjust RF AGC VT

TP1902

adjust VCO coil

PIF/SIF IC

**A10/12**

Video Baseband 4MHz

L1910

+9V_a

22

C1946

6.1

47/59

C1956

1.6W

R1953

3.0K

1/16W

C1955A

10/50

R1942

20K

1/16W

C1955A

10/50

R1955

30K

1/16W

C1955A

10/50

R1942

1.6K

1/16W

C1950

1000p

C1951

1.6K

1/16W

C1952

1.6K

1/16W

C1953

1.6K

1/16W

C1954

1.6K

1/16W

C1955

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C1997

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C1999

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C1990

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1/16W

C1991

1.6K

1/16W

C1992

1.6K

1/16W

C1993

1.6K

1/16W

C1994

1.6K

1/16W

C1995

1.6K

1/16W

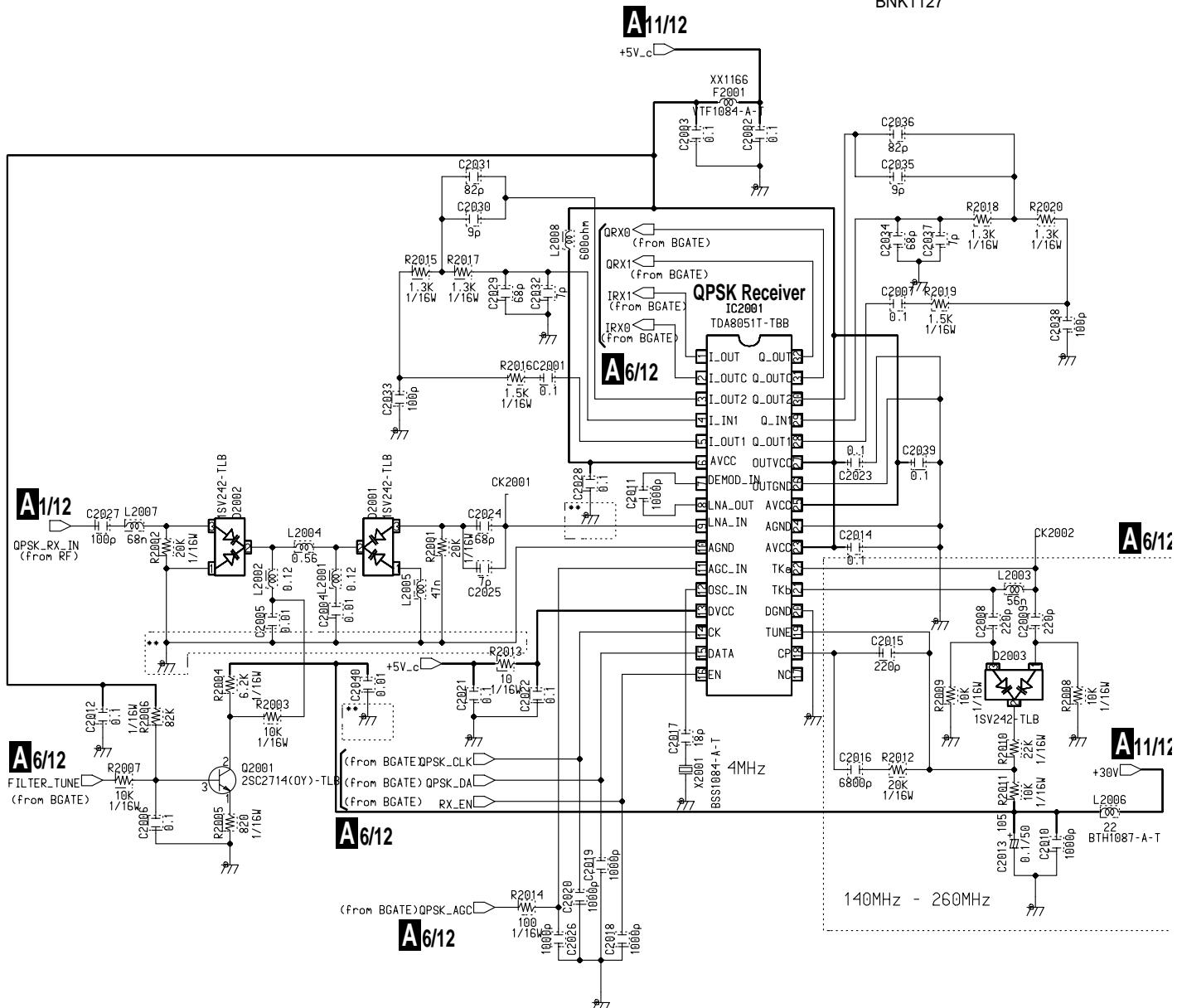
3.3 MAIN ASSY (2/12)

A 2/12 MAIN ASSY (2/12) (BWX1141) • QPSK,Tx,Rx BLOCK

• QPSK Tx.Rx BLOCK

QPSK Rx

SHEALD CASE
BNK1127



** These grounds should be made common

Be sure to use parts of identical designation at mark.

RESISTORS

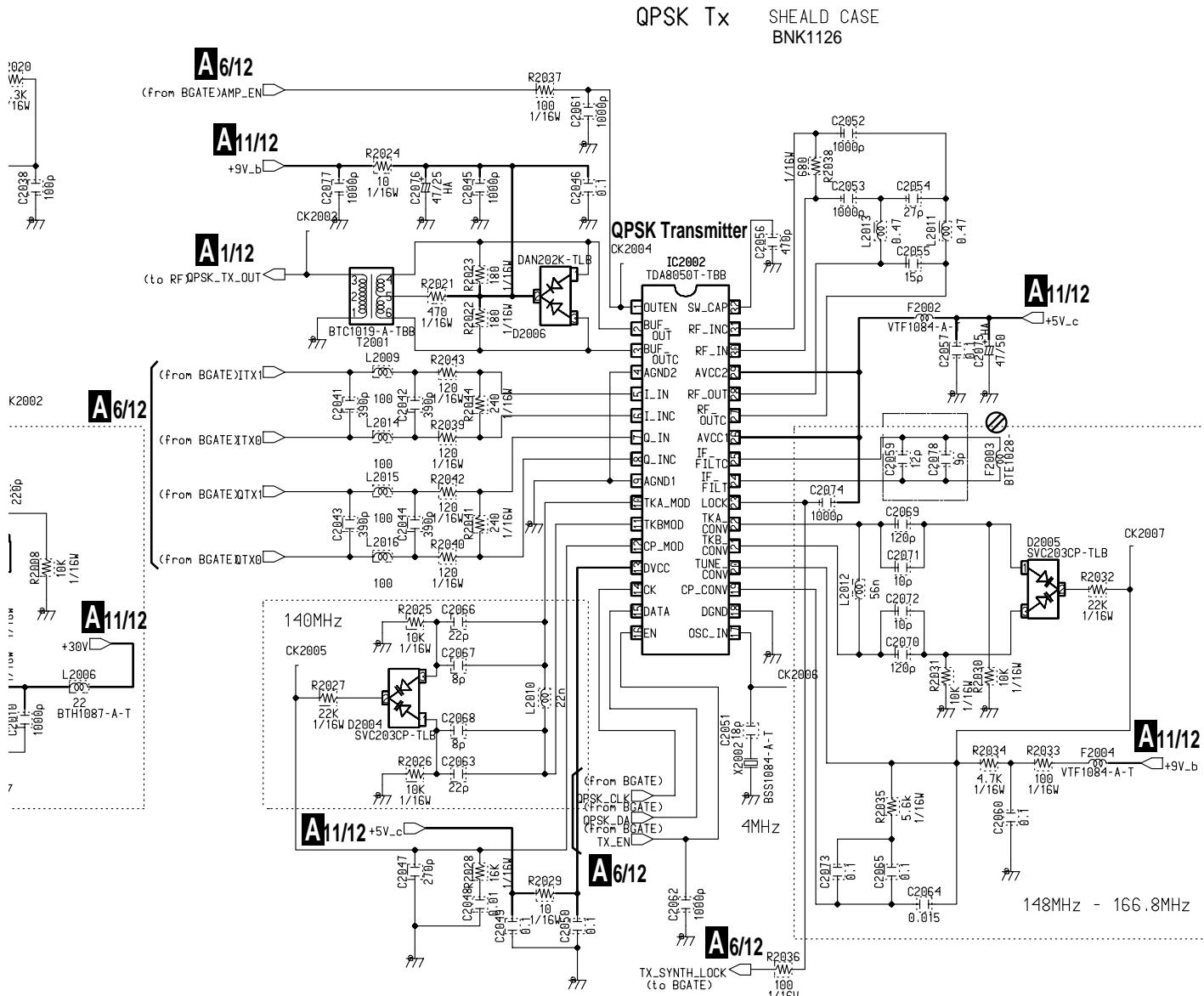
RESISTORS
Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted
K,K Ω ,M,M Ω .

CAPACITORS

Indicated in Capacity(F)/VOLTAGE(V) unless otherwise noted.P/PF.
Indication without voltage is 50V except electrolytic capacitor.

10

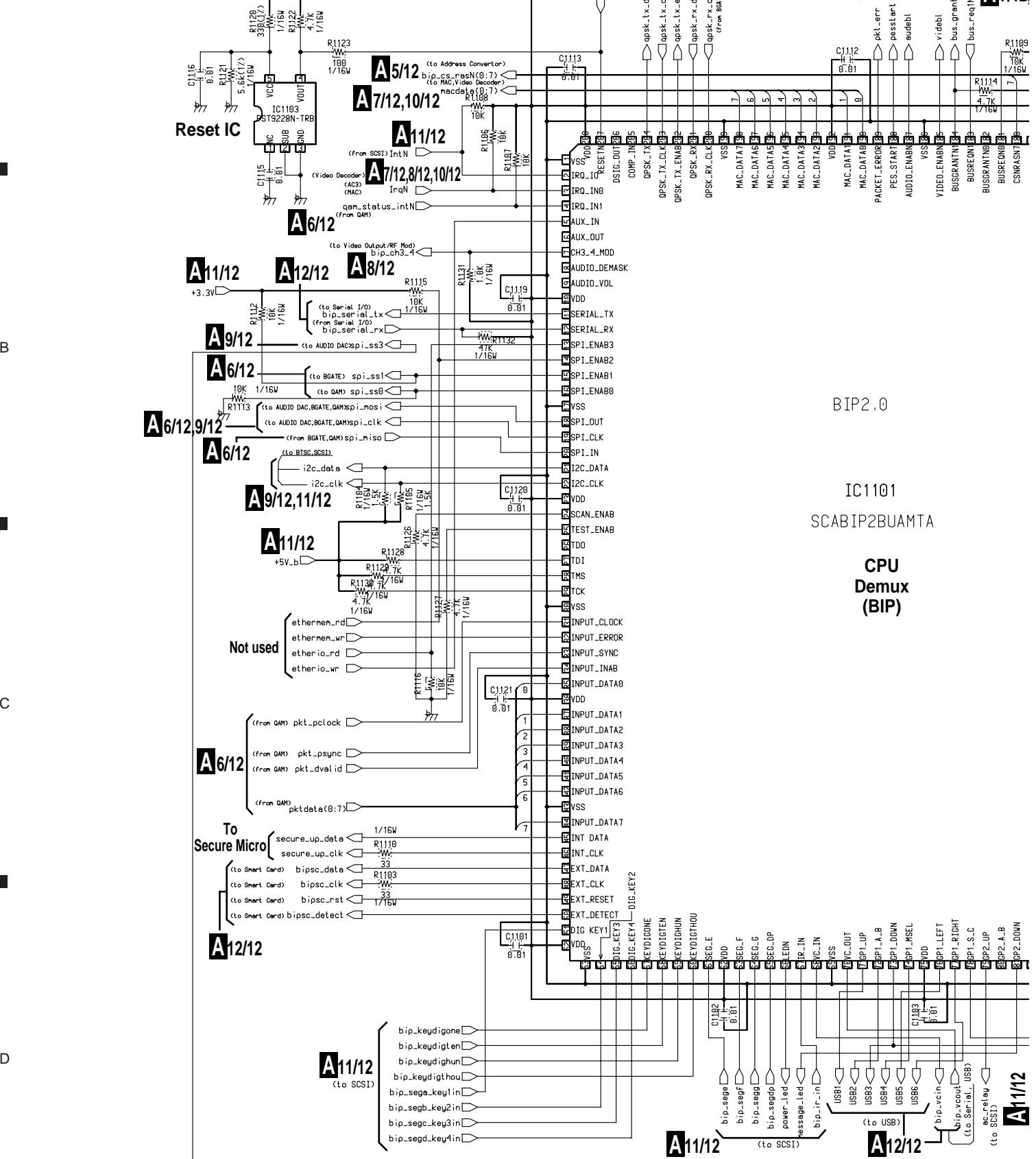
A 2/12



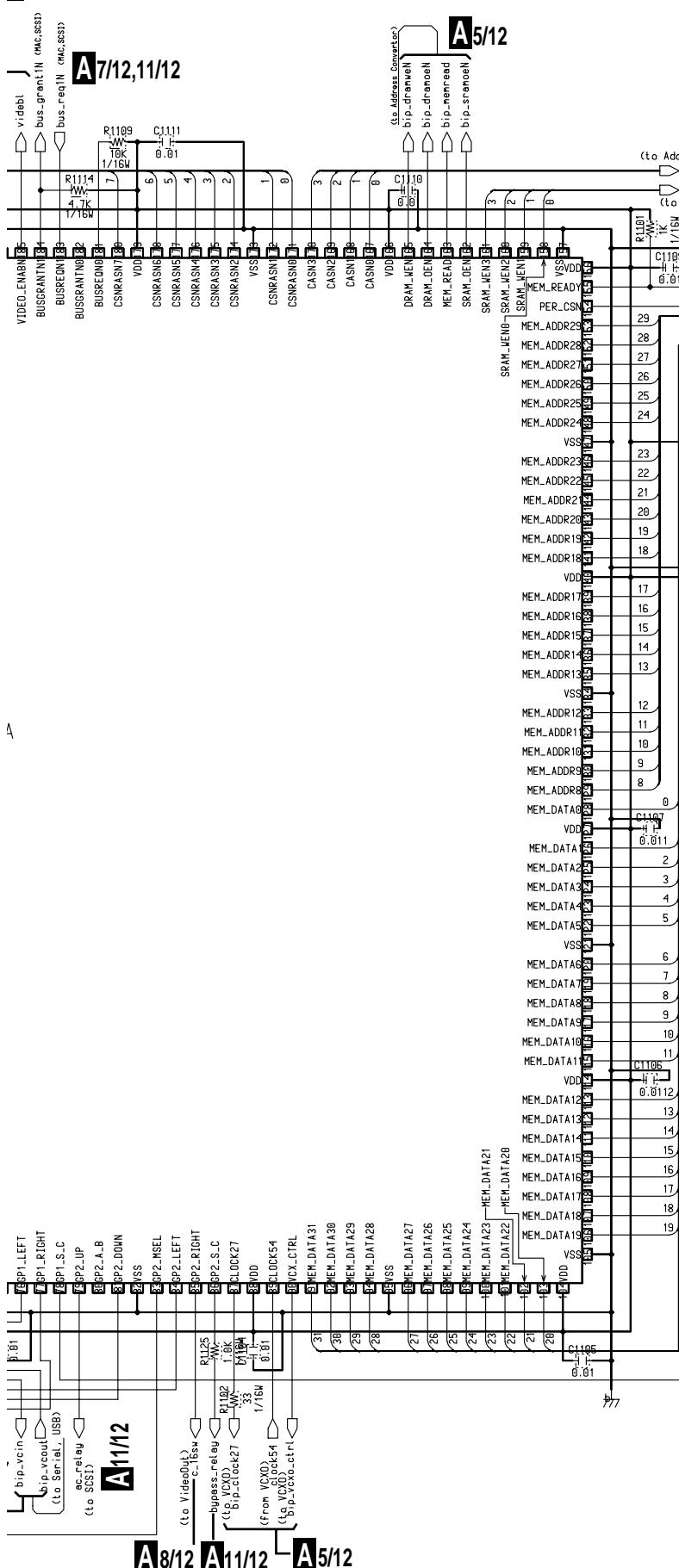
3.4 MAIN ASSY (3/12)

A 3/12 MAIN ASSY (3/12) (BWX1141)
•BIP,Secure,Reset,EEPROM BLOCK

A



A7/12

Be sure to use parts of identical designation at Δ mark.**RESISTORS**Indicated in Ω , 1/16W 5% Tolerance unless otherwise notedK; \square ;M; \triangle **CAPACITORS**Indicated in Capacitance(μ F)/VOLTAGE(V) unless otherwise noted.P;PF.

Indication without voltage is 50V except electrolytic capacitor.

A3/12,7/12,8/12,11/12

(to Address Converter)

bip_casN(0:3)

(to Address Converter)

bip_sramweN(0:3)

(to Address Converter)

bip_dramread

bip_renread

bip_srmbusN

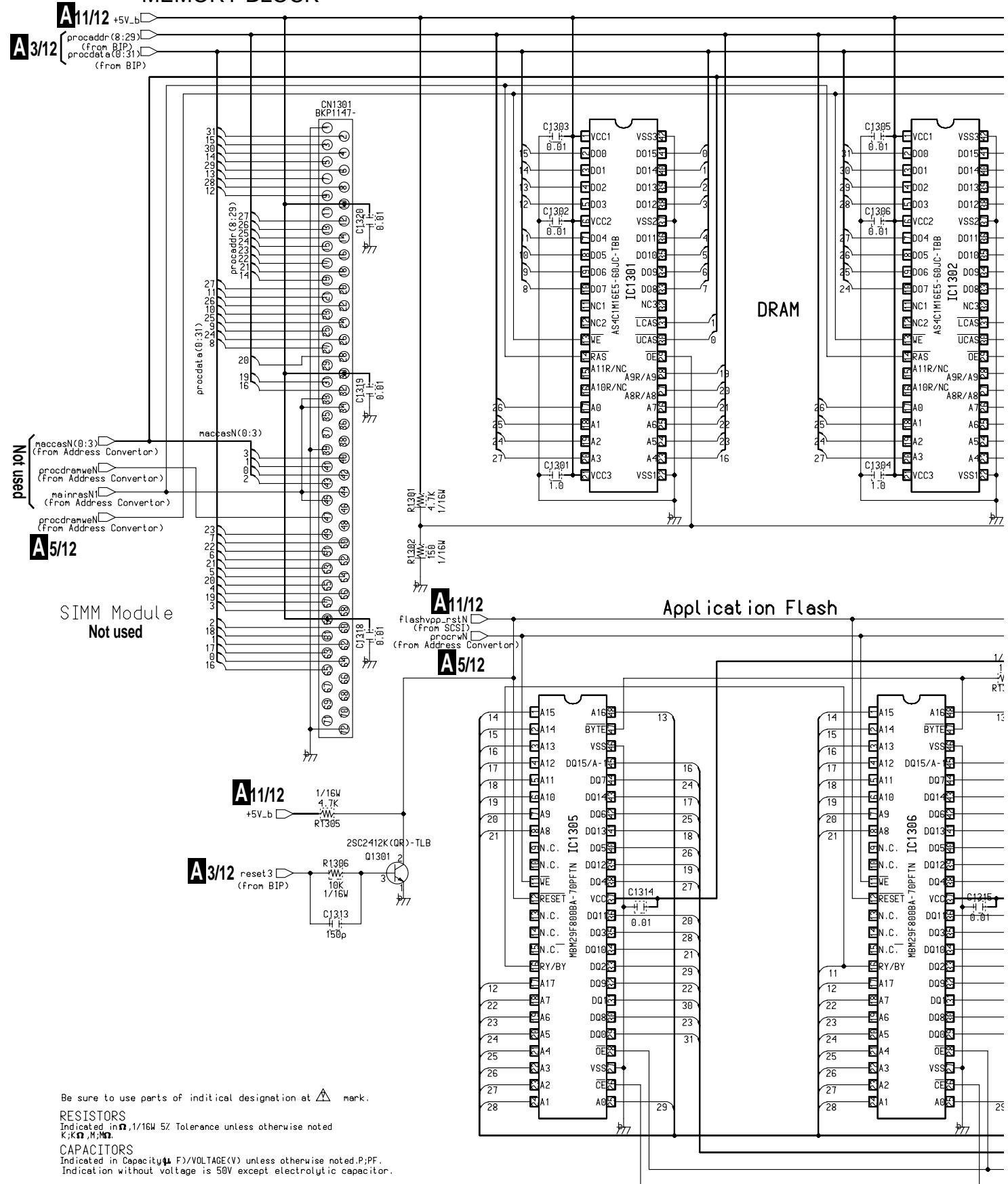
b

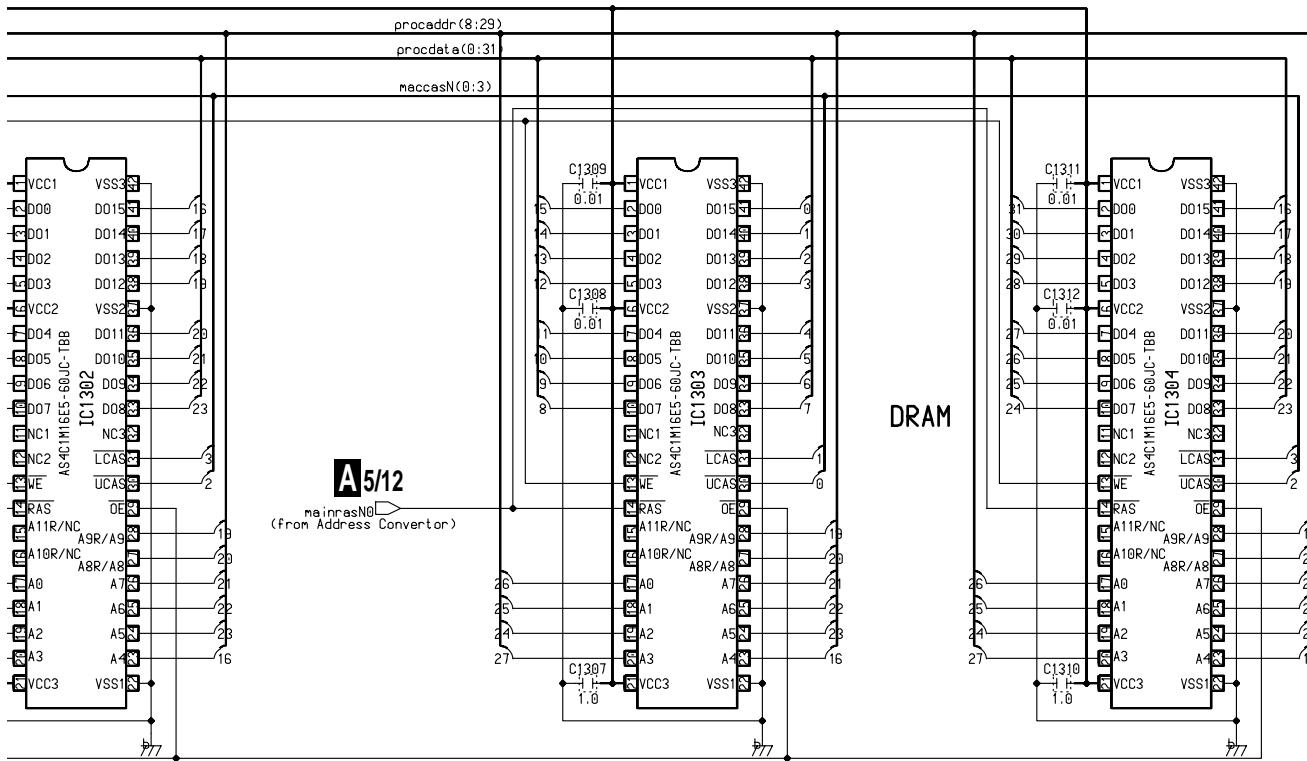
BD-V1100, BD-V1110

3.5 MAIN ASSY (4/12)

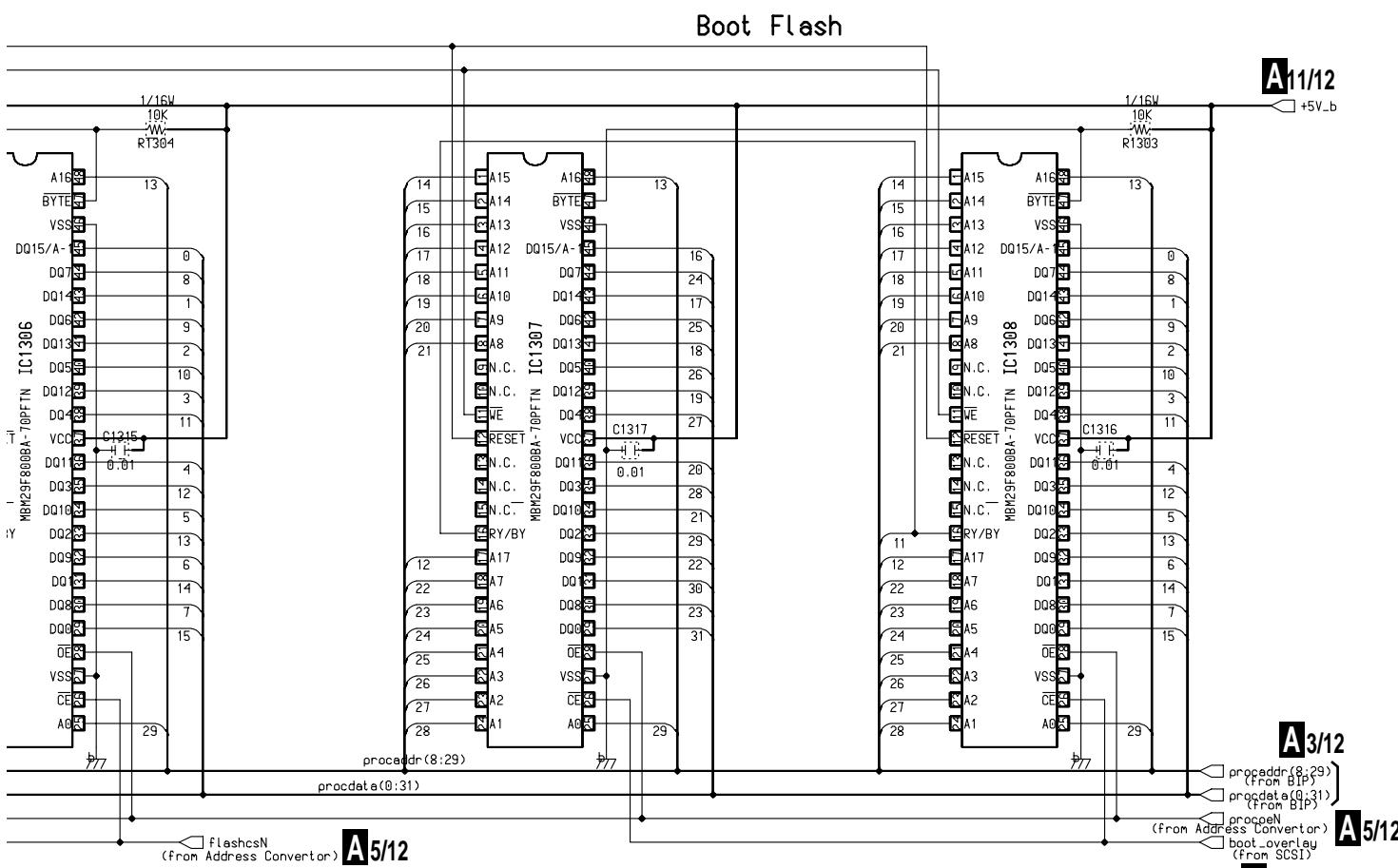
A 4/12 MAIN ASSY (4/12) (BWX1141)

- MEMORY BLOCK





A



B

C

D

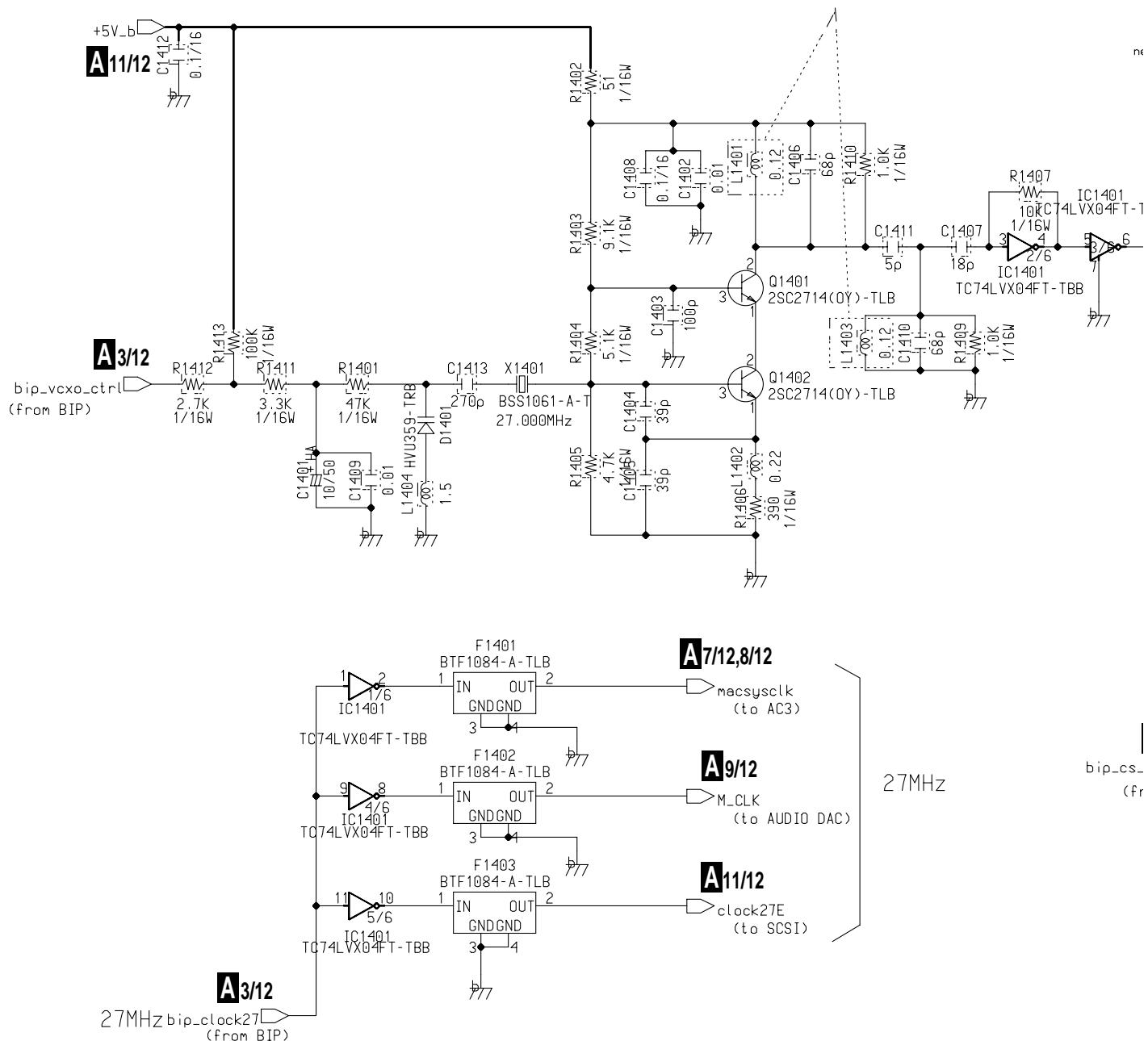
BD-V1100, BD-V1110

3.6 MAIN ASSY (5/12)

• 54MHz VCXO Address Converter BLOCK

54MHz VCXO Block

Must use TDK Coil



Be sure to use parts of identical designation at

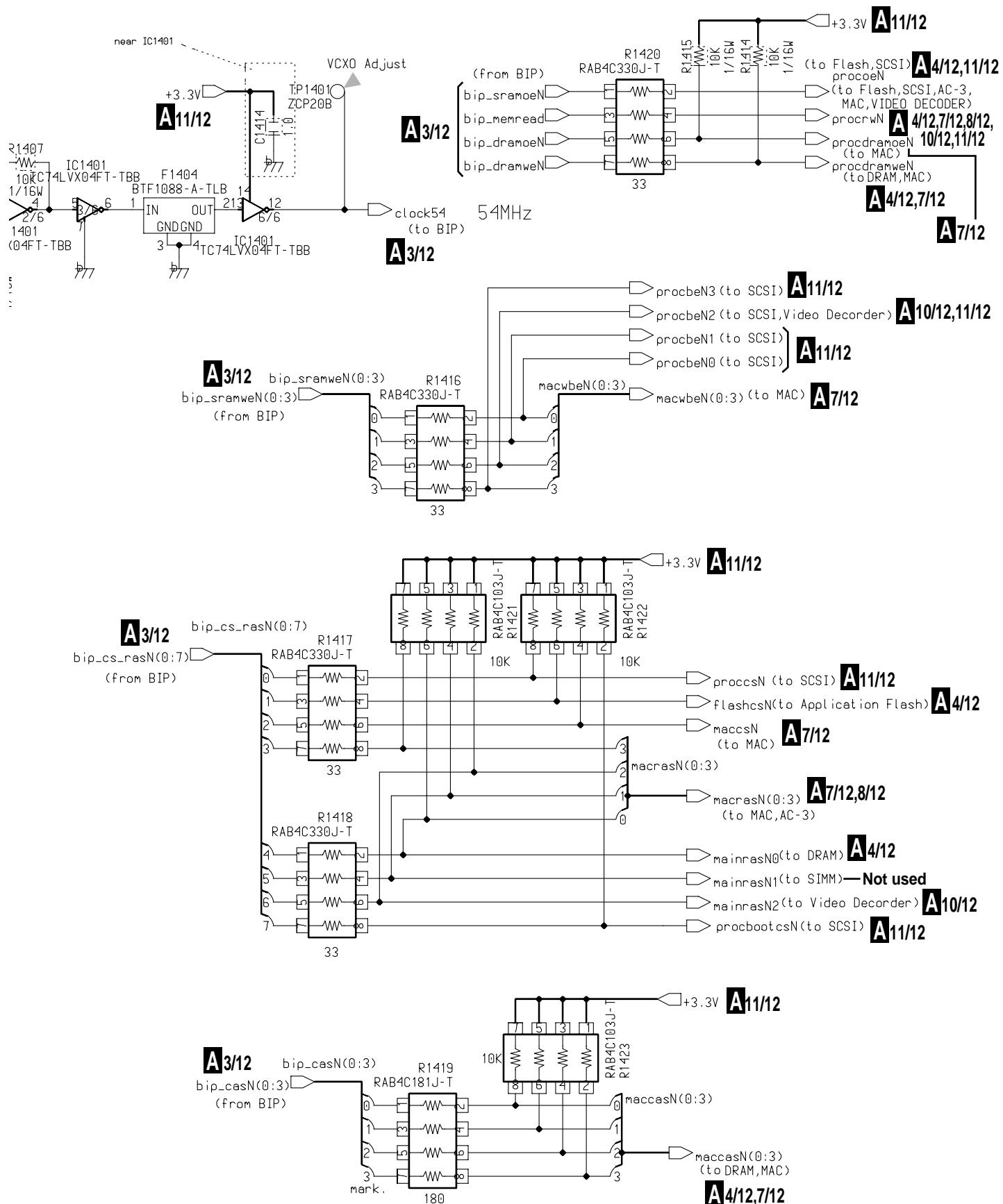
RESISTORS

RESISTORS
Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted
K; K Ω ; M; M Ω .

CAPACITORS

Indicated in Capacity(F)/VOLTAGE(V) unless otherwise noted.P/PF.
Indication without voltage is 50V except electrolytic capacitor.

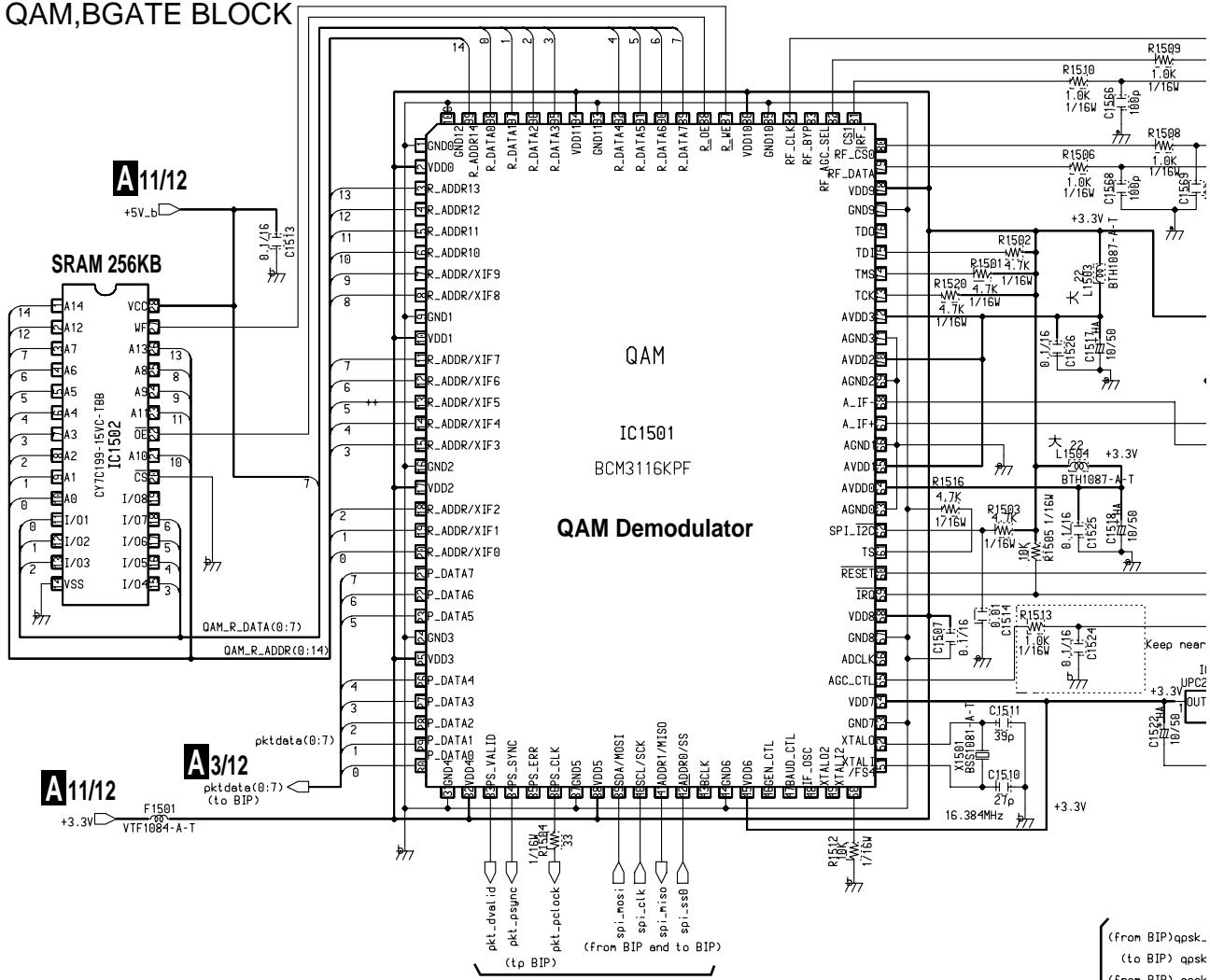
Address Converter Block



BD-V1100, BD-V1110

3.7 MAIN ASSY (6/12)

• QAM-BGATE BLOCK

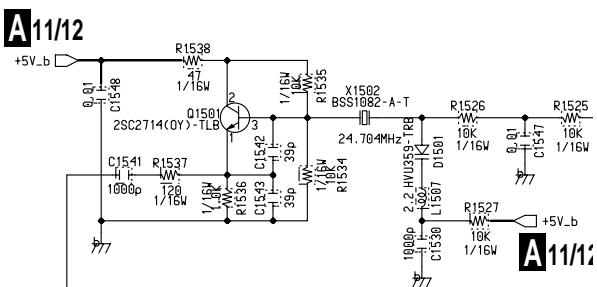


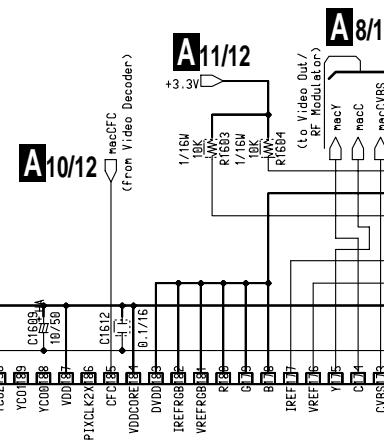
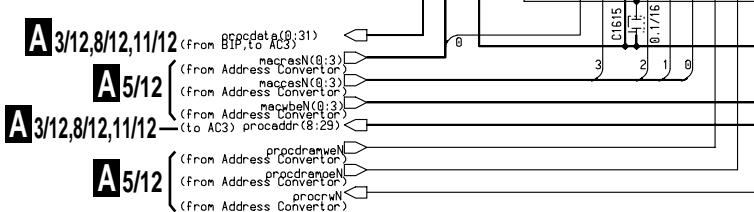
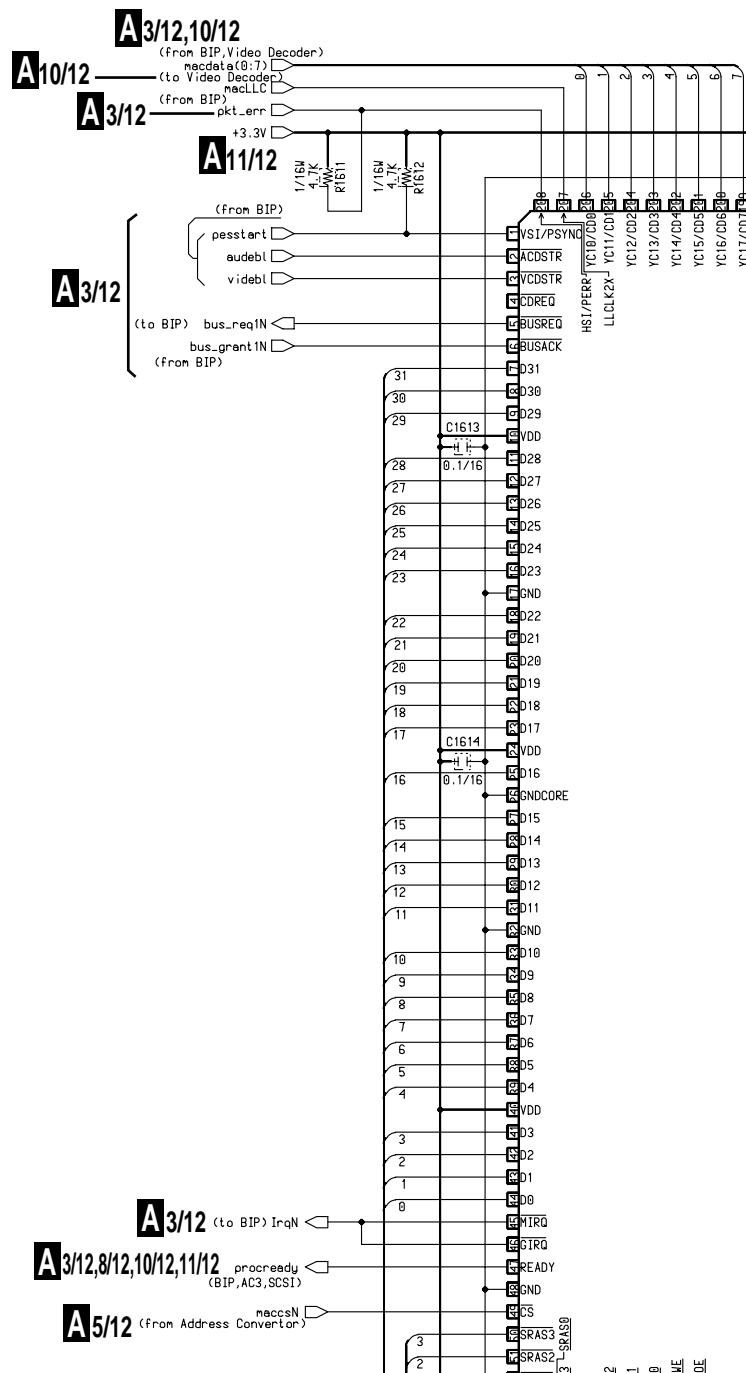
Recomendaciones para la utilización de las técnicas de Δ -y Δ -y- Δ

Be sure to use parts of identical designation at △
RESISTORS

Indicated in Ω , 1
K:K Ω M:M Ω

CAPACITORS
Indicated in Capacity(F)/VOLTAGE(V) unless otherwise noted.P/PF.
Indication without voltage is 50V except electrolytic capacitors.



2
3.8 MAIN ASSY (7/12)**A 7/12****A 7/12** MAIN ASSY (7/12) (BWX1141)
• MAC BLOCK

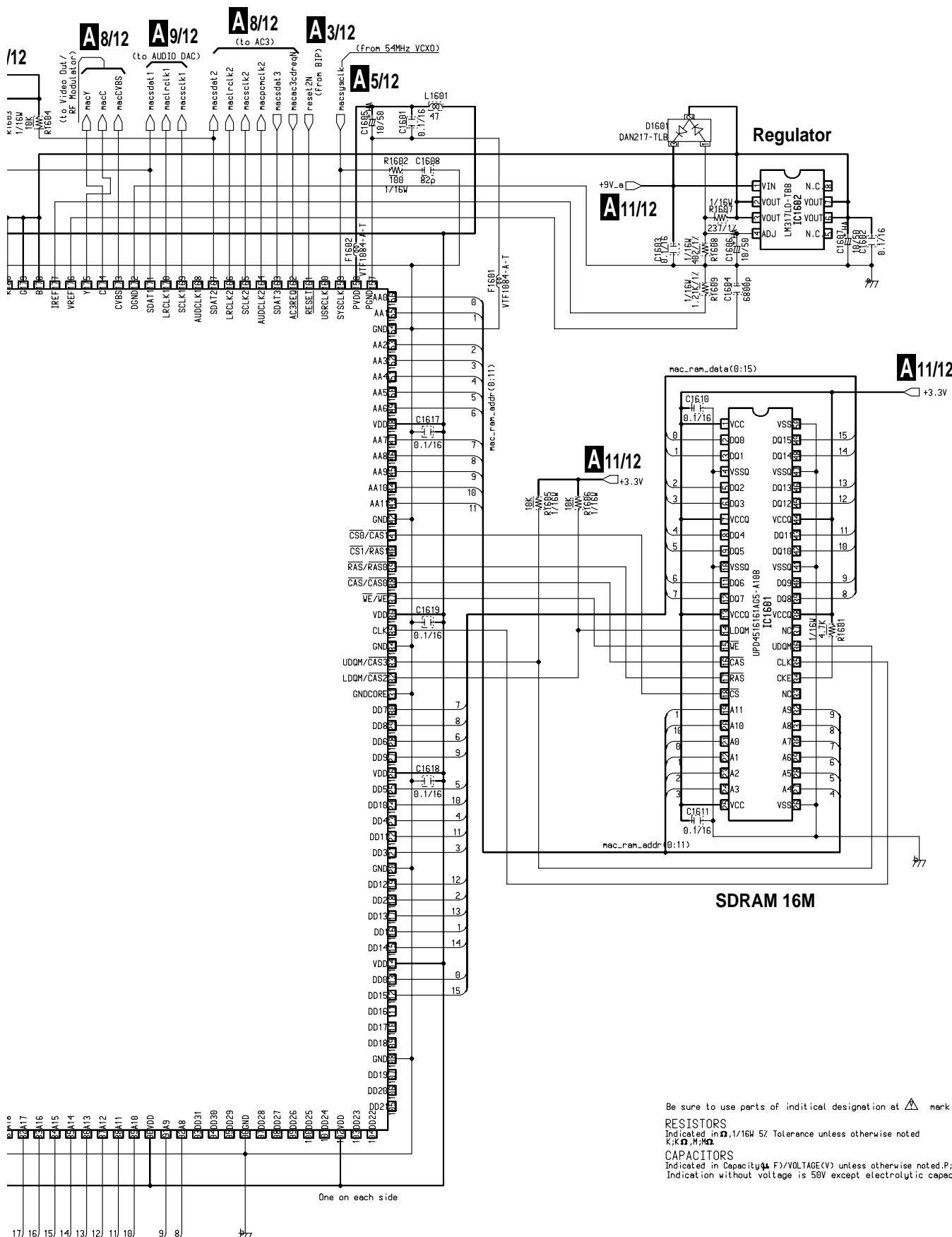
MAC2.0

IC1603

STI5600ACV

MPEG Decoder
Graphic
NTSC DENC

[MAC]



Be sure to use parts of identical designation at mark

RESISTORS

Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted

K;KΩ,M;MΩ

CAPACITORS
Indicated in Capacity(F) / VOLTAGE(V) unless otherwise noted. P/PF.
Indication without voltage is 50V except electrolytic capacitor.

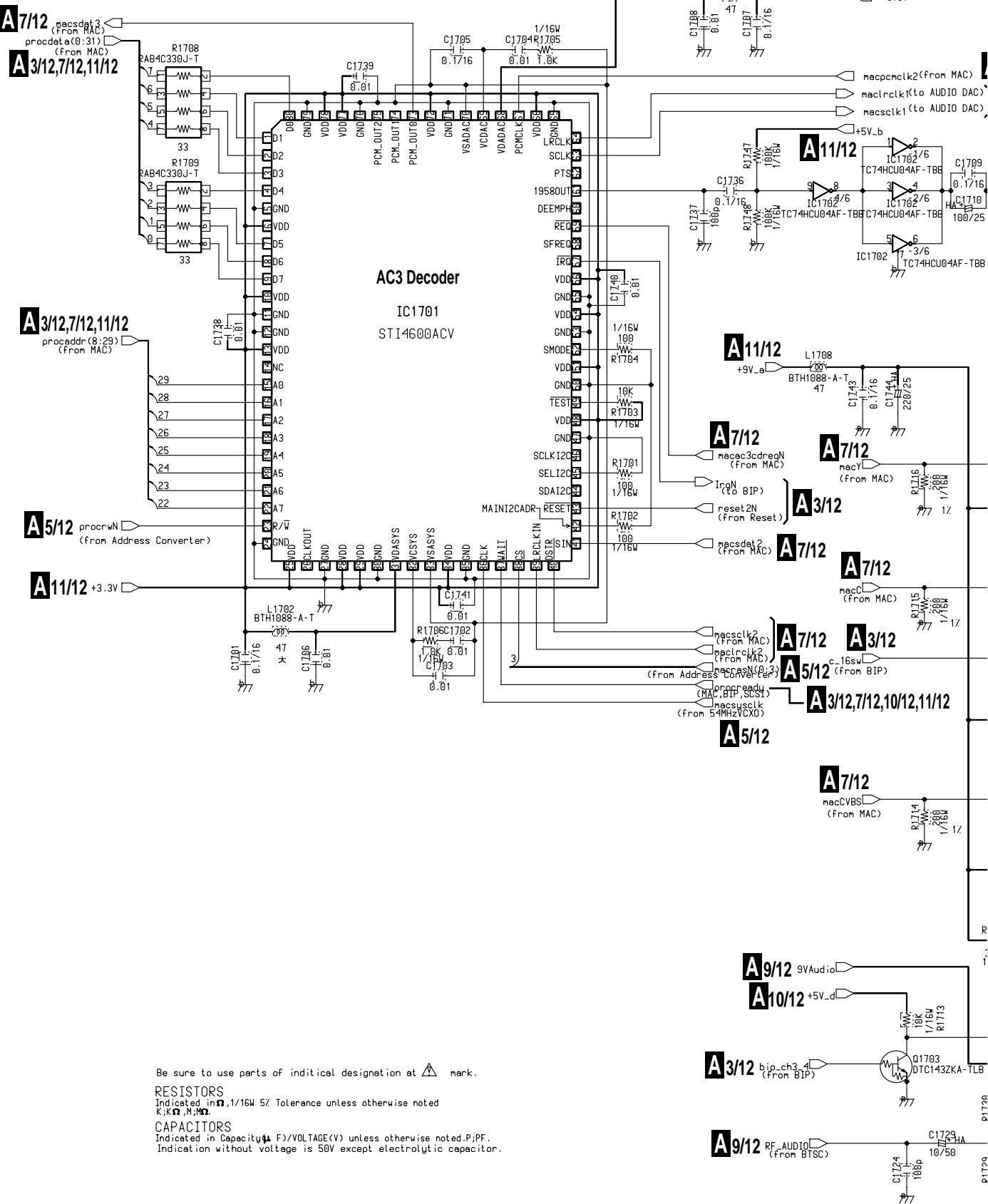
BD-V1100, BD-V1110

3.9 MAIN ASSY (8/12)

A 8/12 MAIN ASSY (8/12) (BWX1141)

- AC3, Video Out, RF Mod BLOCK

• AC3, Video Out, RF Mod BLOCK



Be sure to use parts of identical designation at mark.

PESTSTOPPS

RESISTORS
Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted

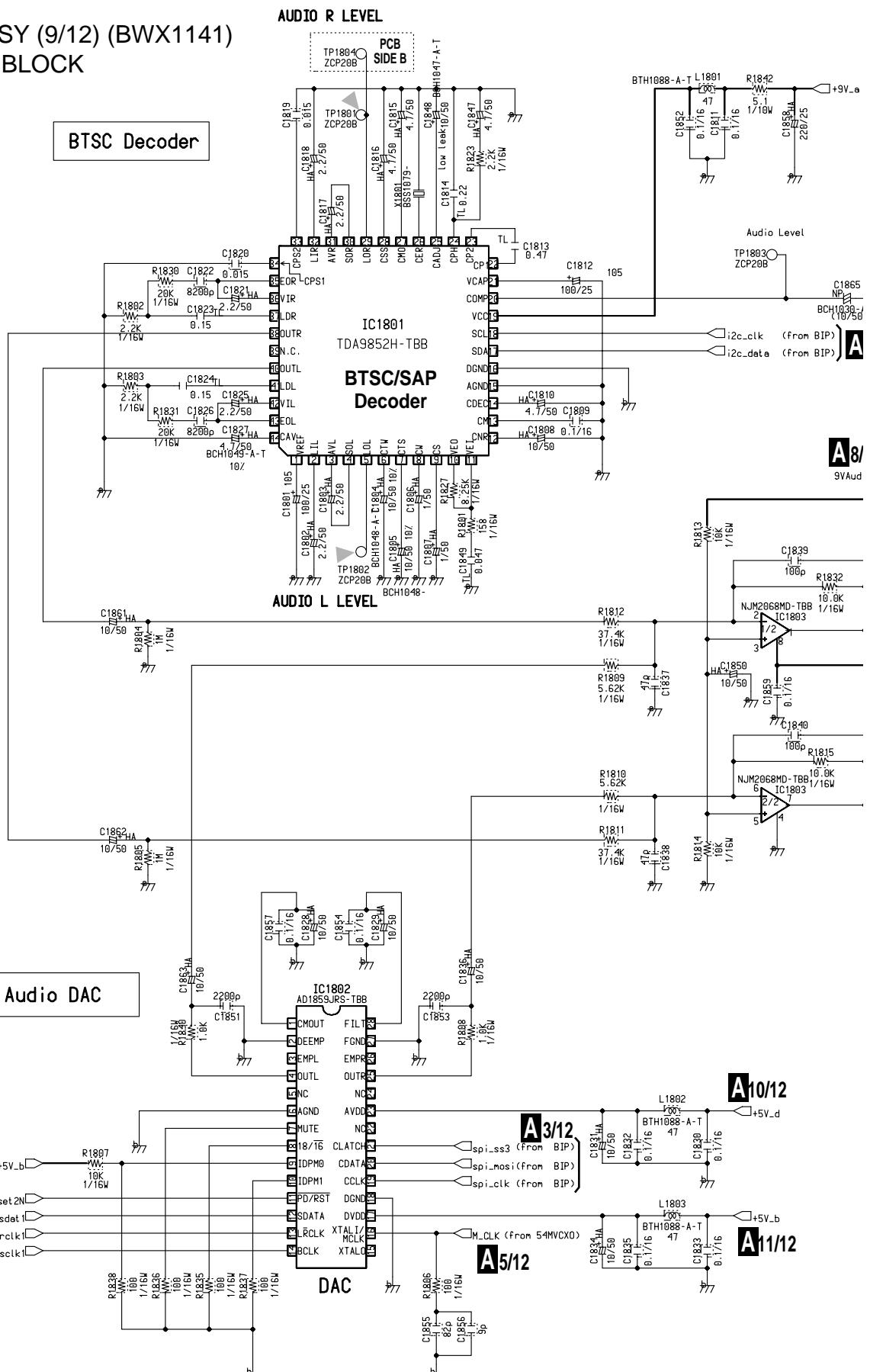
K;KΩ,M;MΩ.

CAPACITORS
Indicated in Capacity(F)/VOLTAGE(V) unless otherwise noted.P;PF.
Indication without voltage is 50V except electrolytic capacitor.

22

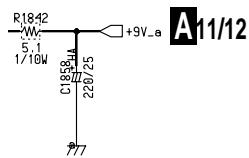
A 8/12

A 9/12 MAIN ASSY (9/12) (BWX1141)
• AUDIO BLOCK



24

A 9/12

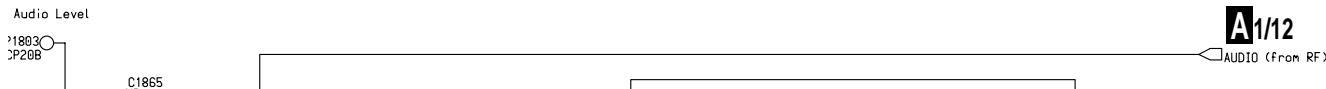


Be sure to use parts of identical designation at mark.

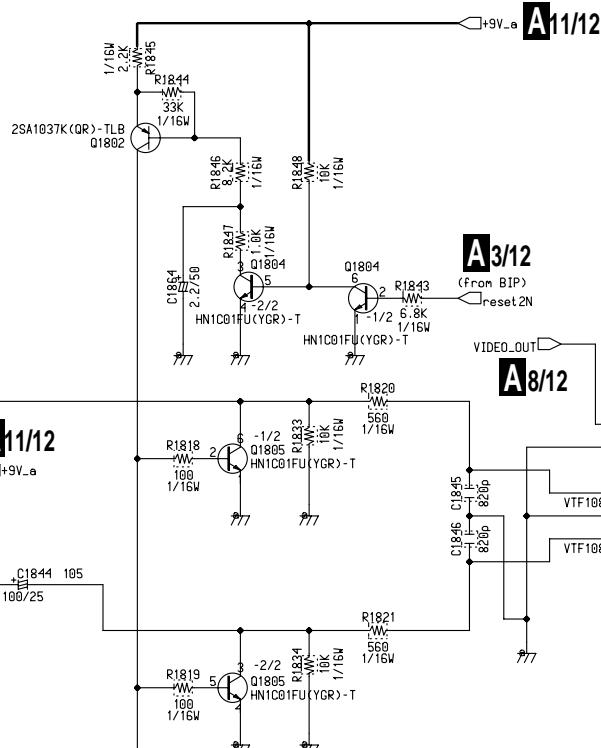
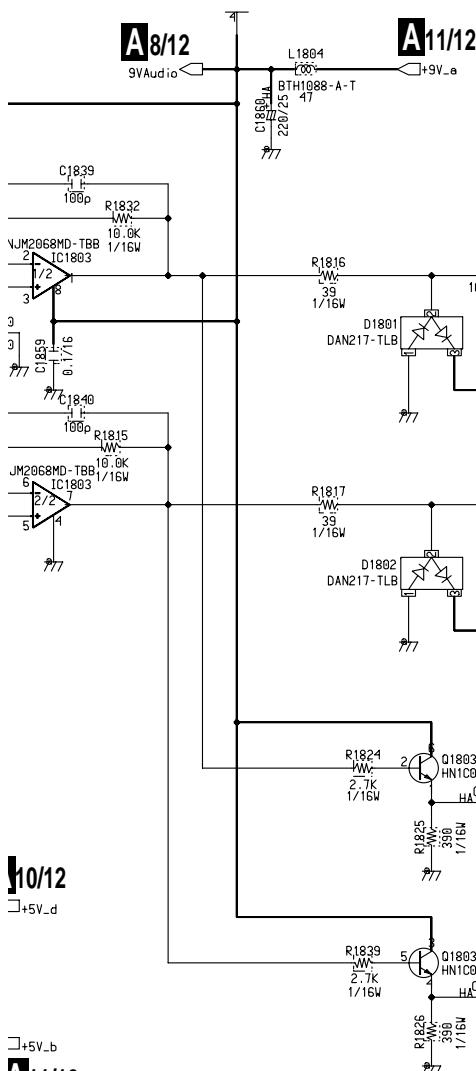
RESISTORS
Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted
K-K Ω M: Ω

R; R_{AS}; M; MAX CAPACITORS

CAPACITORS
Indicated in Capacity(F)/VOLTAGE(V) unless otherwise noted.P/PF.
Indication without voltage is 50V except electrolytic capacitor.



POWER ON MUTE CONTROL CIRCUIT



Baseband Video Output

Baseband Audio Output



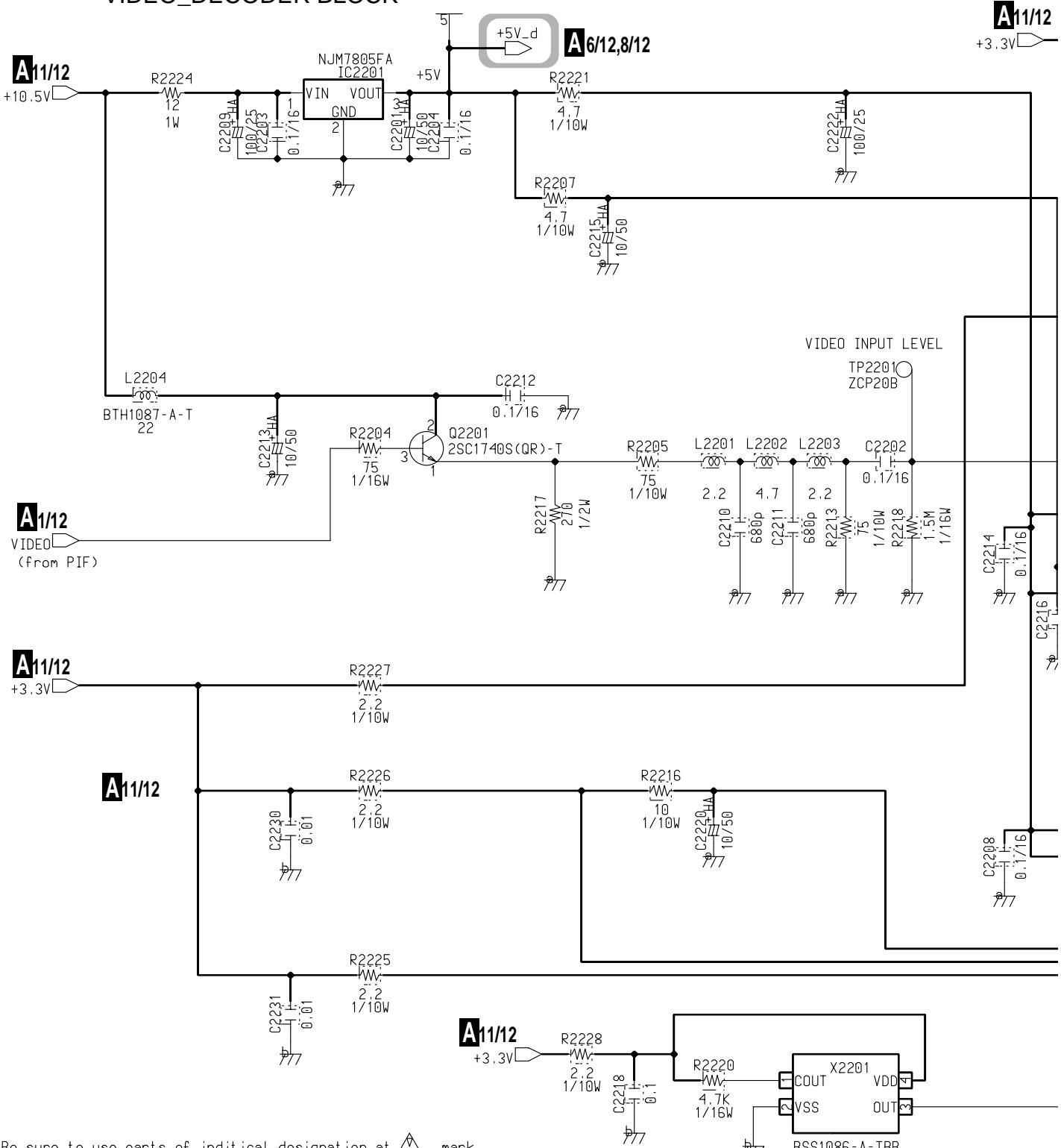
A11/12



3.11 MAIN ASSY (10/12)

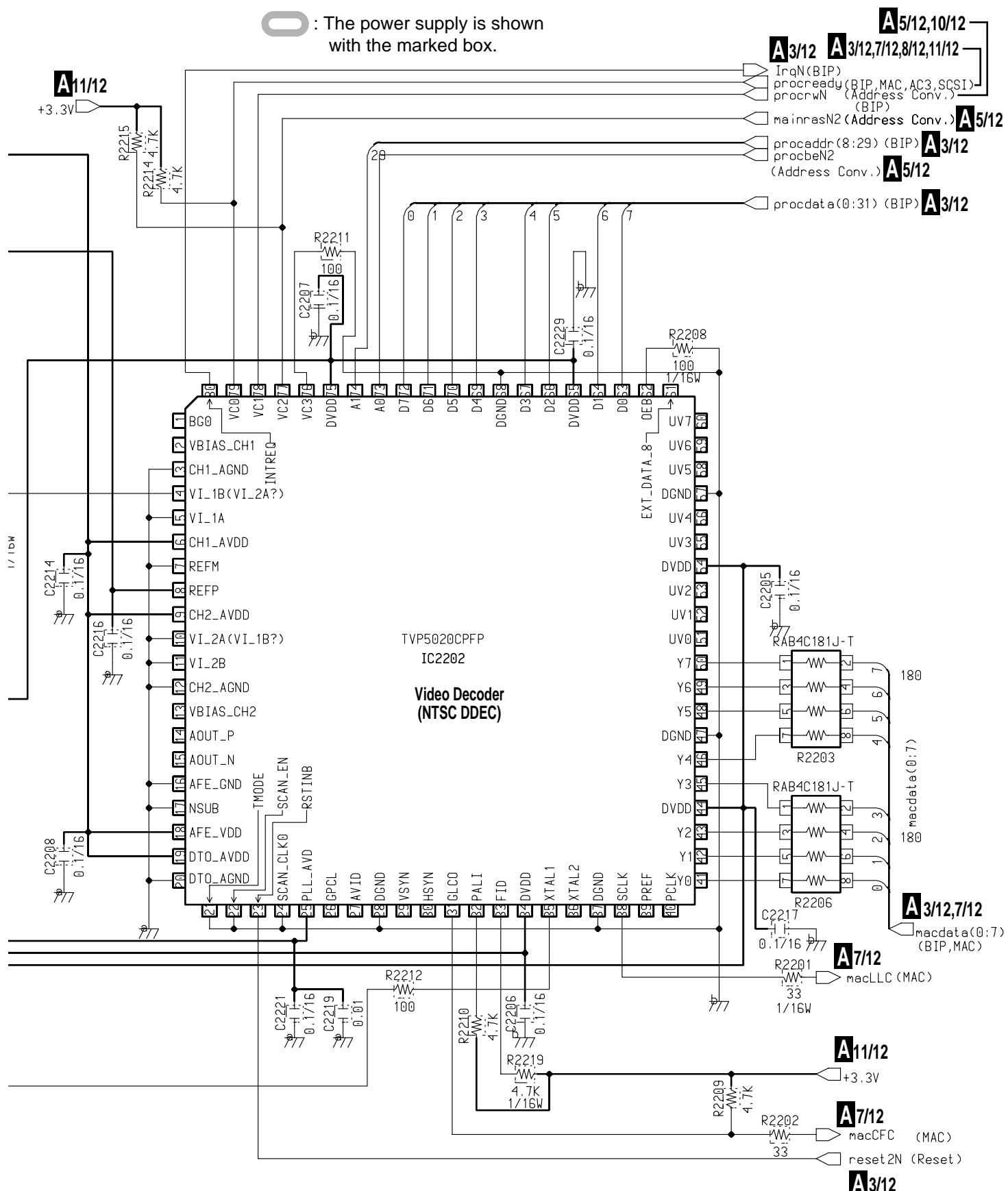
A 10/12 MAIN ASSY (10/12) (BXW1141)

- VIDEO_DECODER BLOCK



BD-V1100, BD-V1110

The power supply is shown with the marked box.

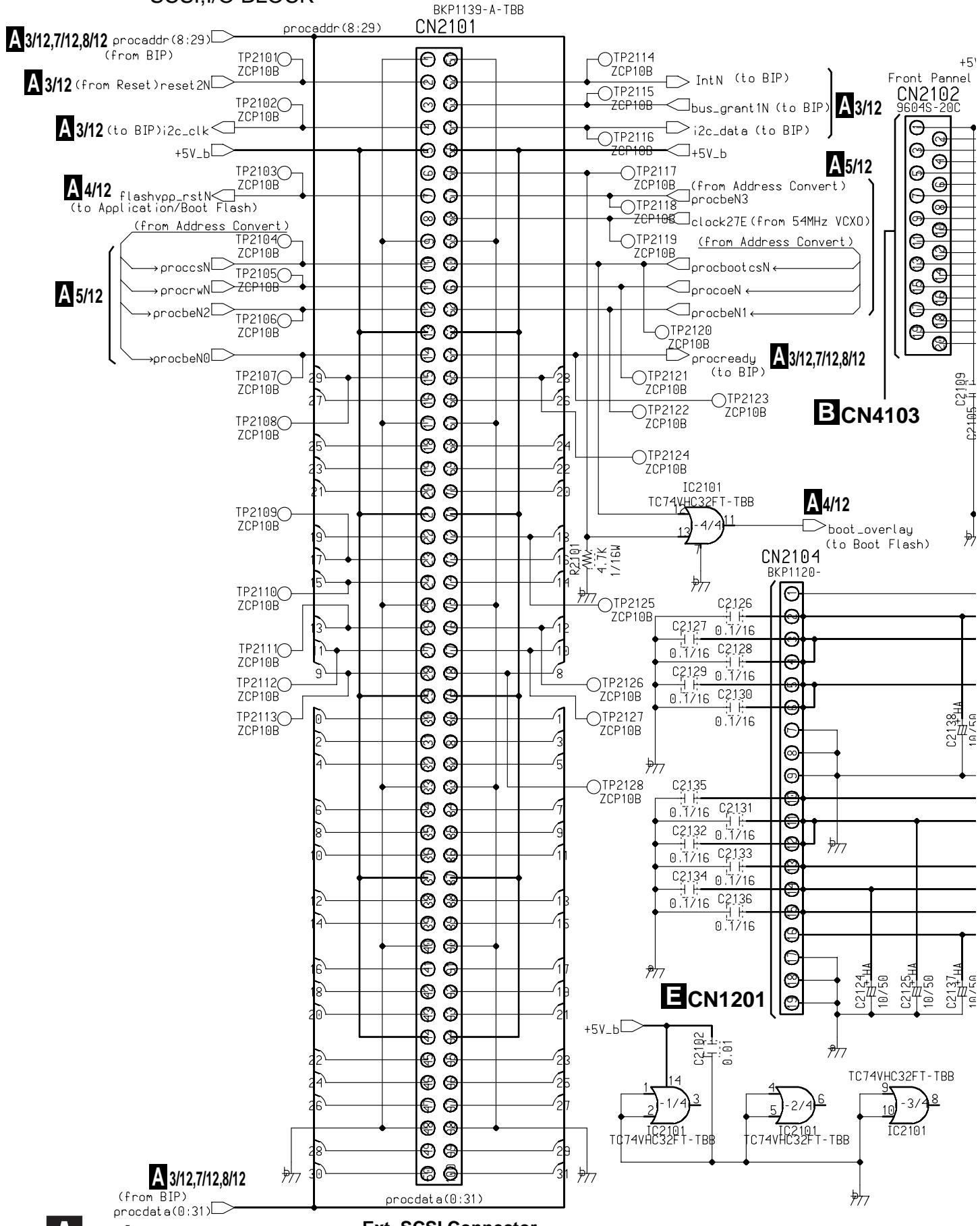


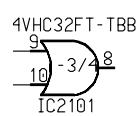
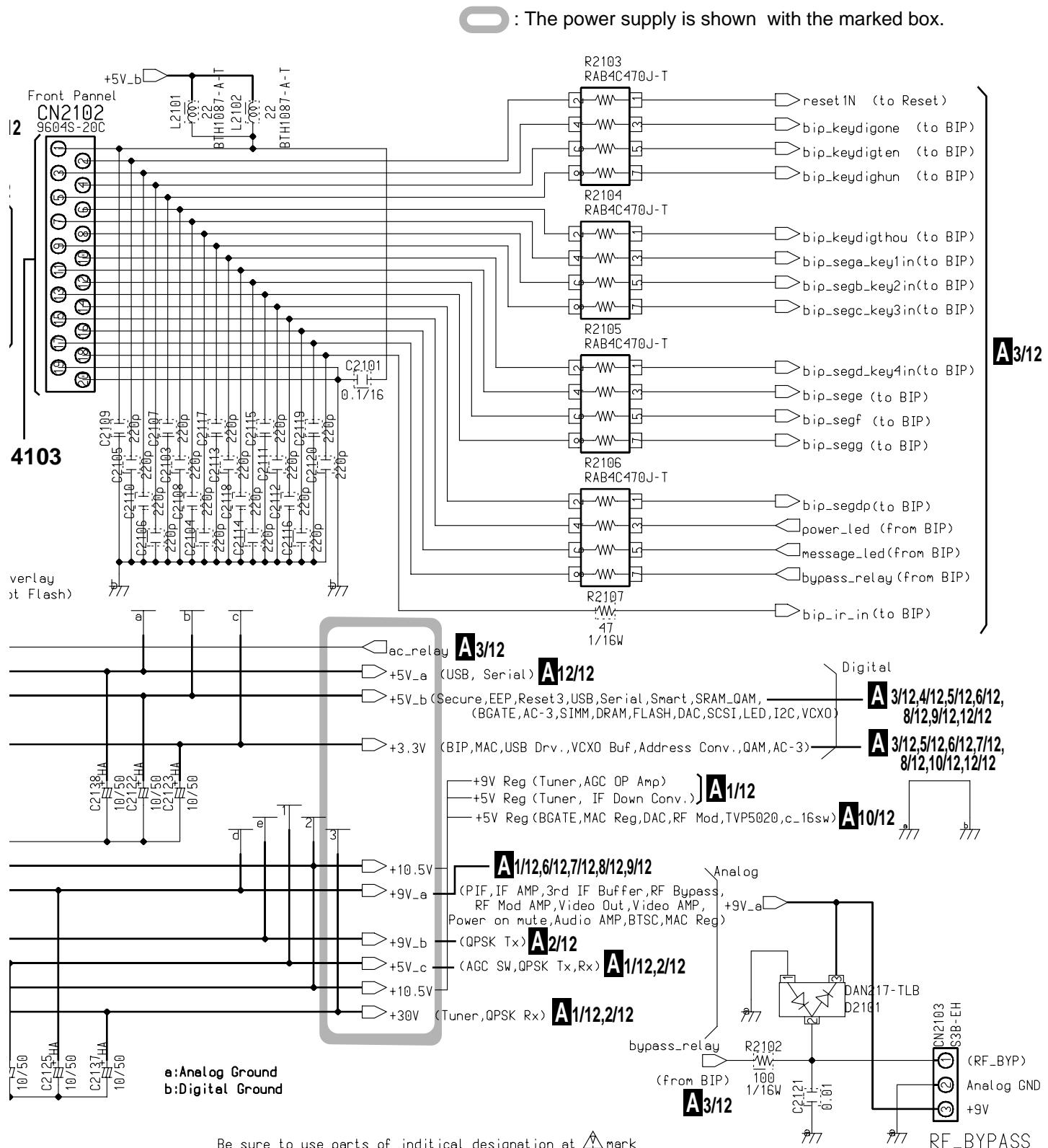
1 BD-V1100, BD-V1110

2 3.12 MAIN ASSY (11/12)

3 A11/12 MAIN ASSY (11/12) (BWX1141)

- SCSI,I/O BLOCK





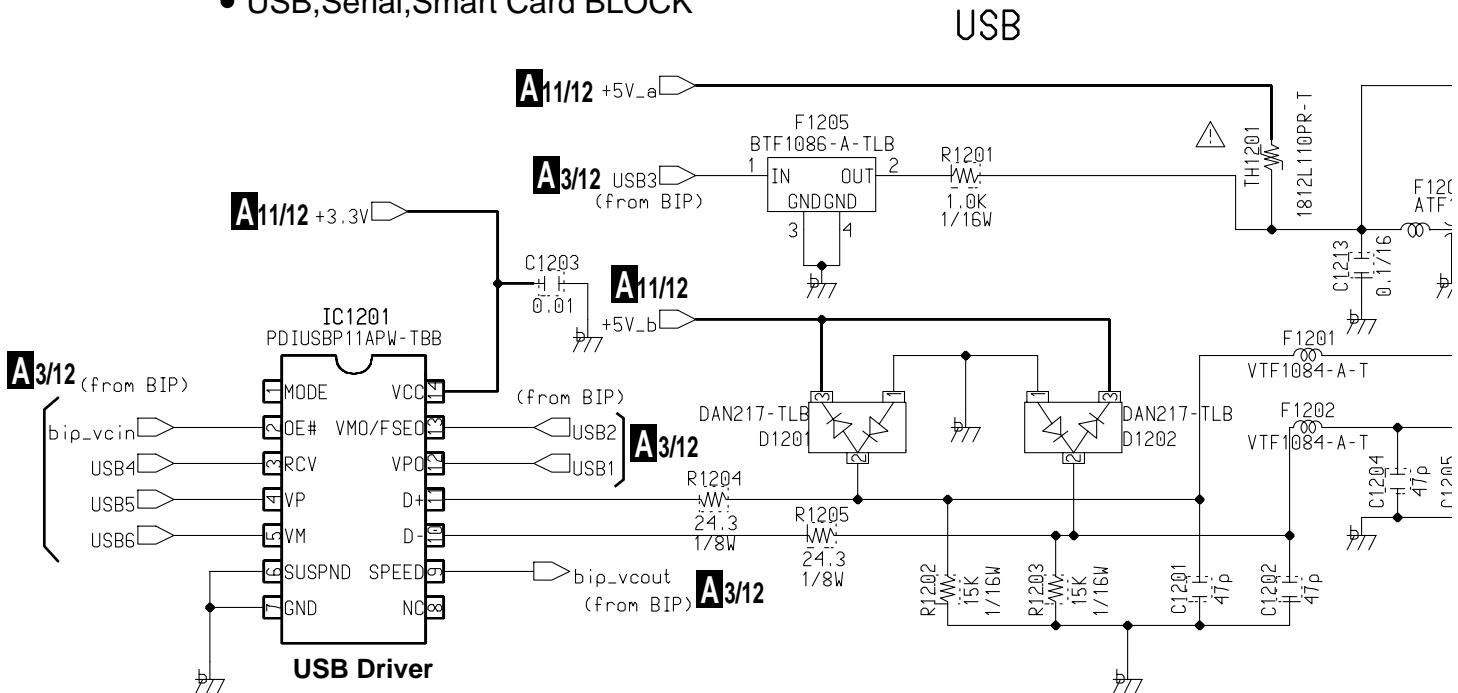
Be sure to use parts of identical designation at \triangle mark

RESISTORS

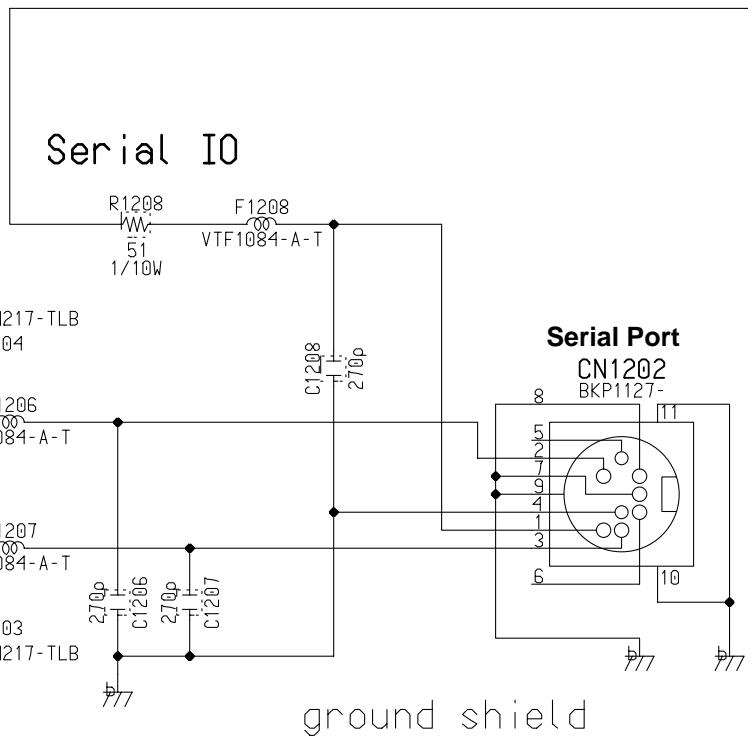
Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted
K; K Ω ; M; M Ω .

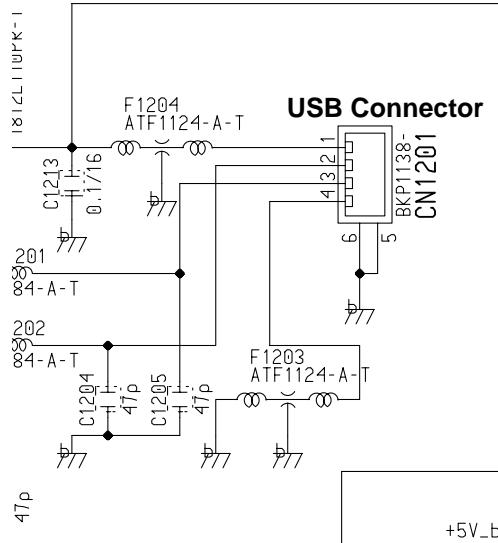
CAPACITORS

Indicated in Capacity (μ F)/VOLTAGE(V) unless otherwise noted. P; PF.
Indication without voltage is 50V except electrolytic capacitor.

3.13 MAIN ASSY (12/12)**A 12/12 MAIN ASSY (12/12) (BXW1141)**
• USB, Serial, Smart Card BLOCK

The \triangle Mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, be sure to use parts of identical designation.



**USB Connector****RESISTORS**

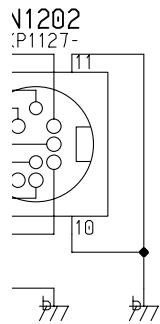
Indicated in Ω , 1/16W 5% Tolerance unless otherwise noted
K;K Ω ;M;M Ω .

CAPACITORS

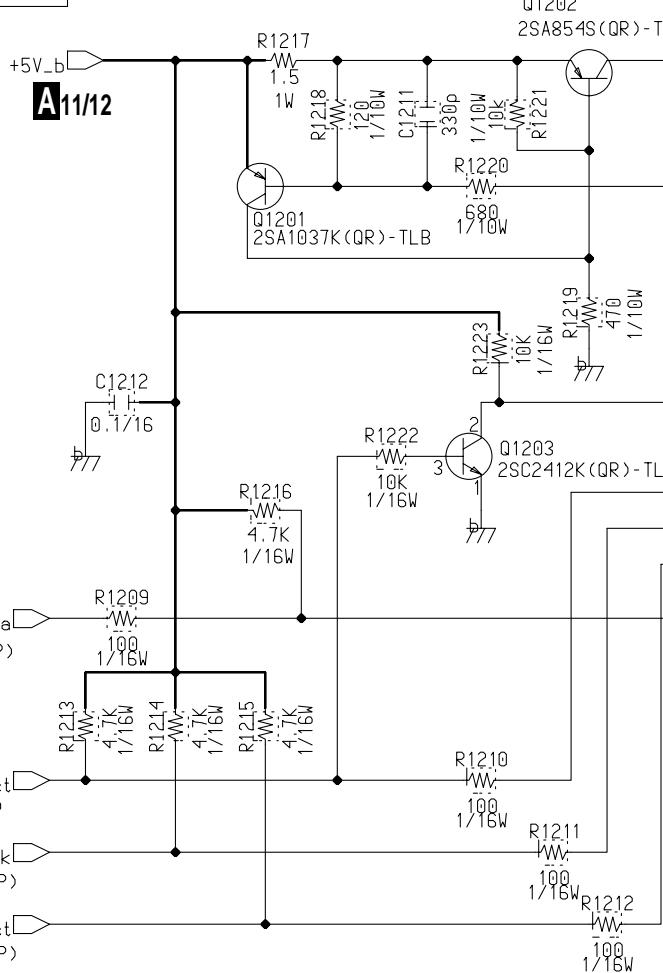
Indicated in Capacity(μ F)/VOLTAGE(V) unless otherwise noted.P;PF.
Indication without voltage is 50V except electrolytic capacitor.

Smart Card

47p

A11/12**al Port****A3/12**

- bipsc_data (from BIP)
- bipsc_detect (from BIP)
- bipsc_clk (from BIP)
- bipsc_rst (from BIP)

**D CN4202**

3.14 FRONT PANEL,POWER SWITCH and CARD ASSYS

B FRONT PANEL ASSY(BWZ1905)**A**
A11/12
CN2102CN4103
9607S-20F

+5V
f_pswN
keyDigOne
keyDigTen
keyDigHun
keyDigThou
bip_dig_key1
bip_dig_key2
bip_dig_key3
bip_dig_key4
bip_seg_e
bip_seg_f
bip_seg_g
bip_seg_dp
power_led
message_led
bypass_led
IR_data
GND
GND

C4112
C4121
C4120
C4119
C4118
C4117
C4116
C4115
C4114
C4113
C4112
C4111
C4108
C4107
C4106
C4105

+5V

1/16W
R4134
1/16W
R4109
1/16W
R4108
1/16W
R4110
1/16W

KeyDigOne

KeyDigTen R4120

KeyDigHun 1.8K 1/16W

KeyDigThou R4118

dig_key1 1.8K 1/16W

dig_key2 R4132

dig_key3 220 1/16W

dig_key4 R4130

seg_e 220 1/16W

seg_f R4128

seg_g 220 1/16W

seg_dp R4117

220 1/16W

R4111

R4112 1.0K 1/16W

R4113 1.0K 1/16W

1.0K 1/16W

R4114 1.0K 1/16W

R4115 1.0K 1/16W

R4116 1.0K 1/16W

1.0K 1/16W

R4117 1.0K 1/16W

R4118 1.0K 1/16W

1.0K 1/16W

R4119 1.0K 1/16W

1.0K 1/16W

R4120 1.0K 1/16W

1.0K 1/16W

R4121 1.0K 1/16W

1.0K 1/16W

R4122 1.0K 1/16W

1.0K 1/16W

R4123 1.0K 1/16W

1.0K 1/16W

CK4106 power_LED

Q4101
DTC114TKA-TLB

CK4102 message_LED

Q4102
DTC114TKA-TLB

CK4104 bypass_LED

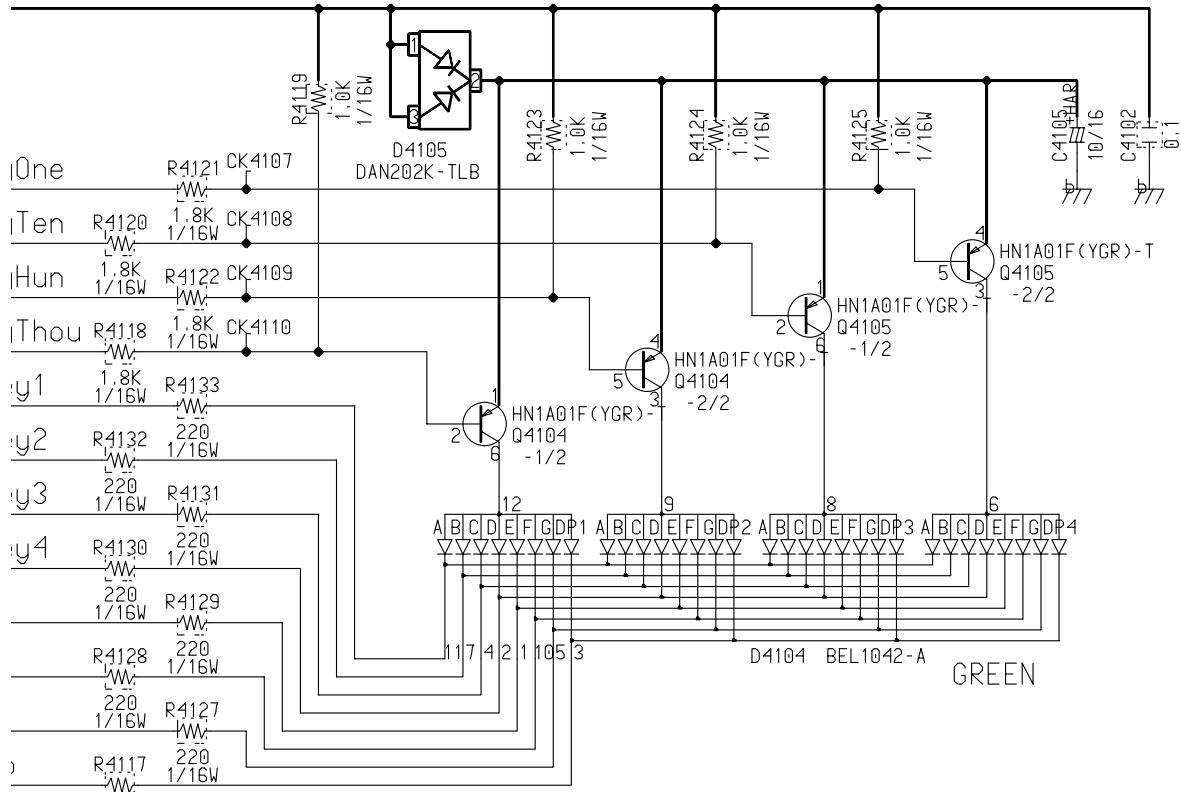
Q4103
DTC114TKA-TLB

IR Receiver

M4101
BXX1033-
VS2
GNDR4135
1/16W
47K
1/16WR4107
1/16W
220
1/16WC4104
10/16
0.1
0.01C4103
0.1
0.01C4101
0.1
0.01C4100
0.1
0.01

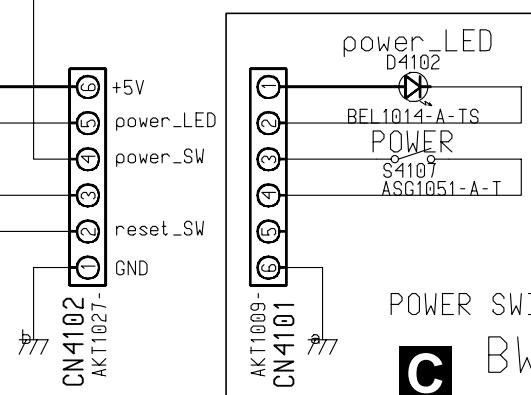
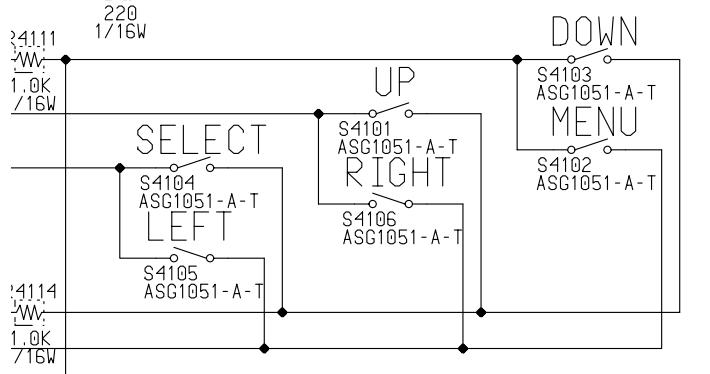
FRONT PANEL Assembly

BWZ1905

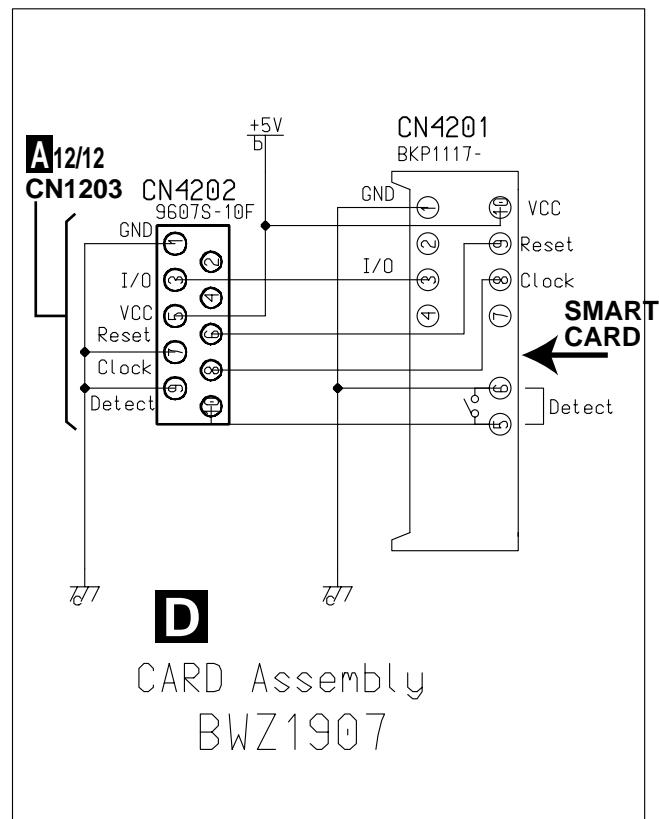


SWITCHES

- S4101: UP
- S4102: MENU
- S4103: DOWN
- S4104: SELECT
- S4105: LEFT
- S4106: RIGHT

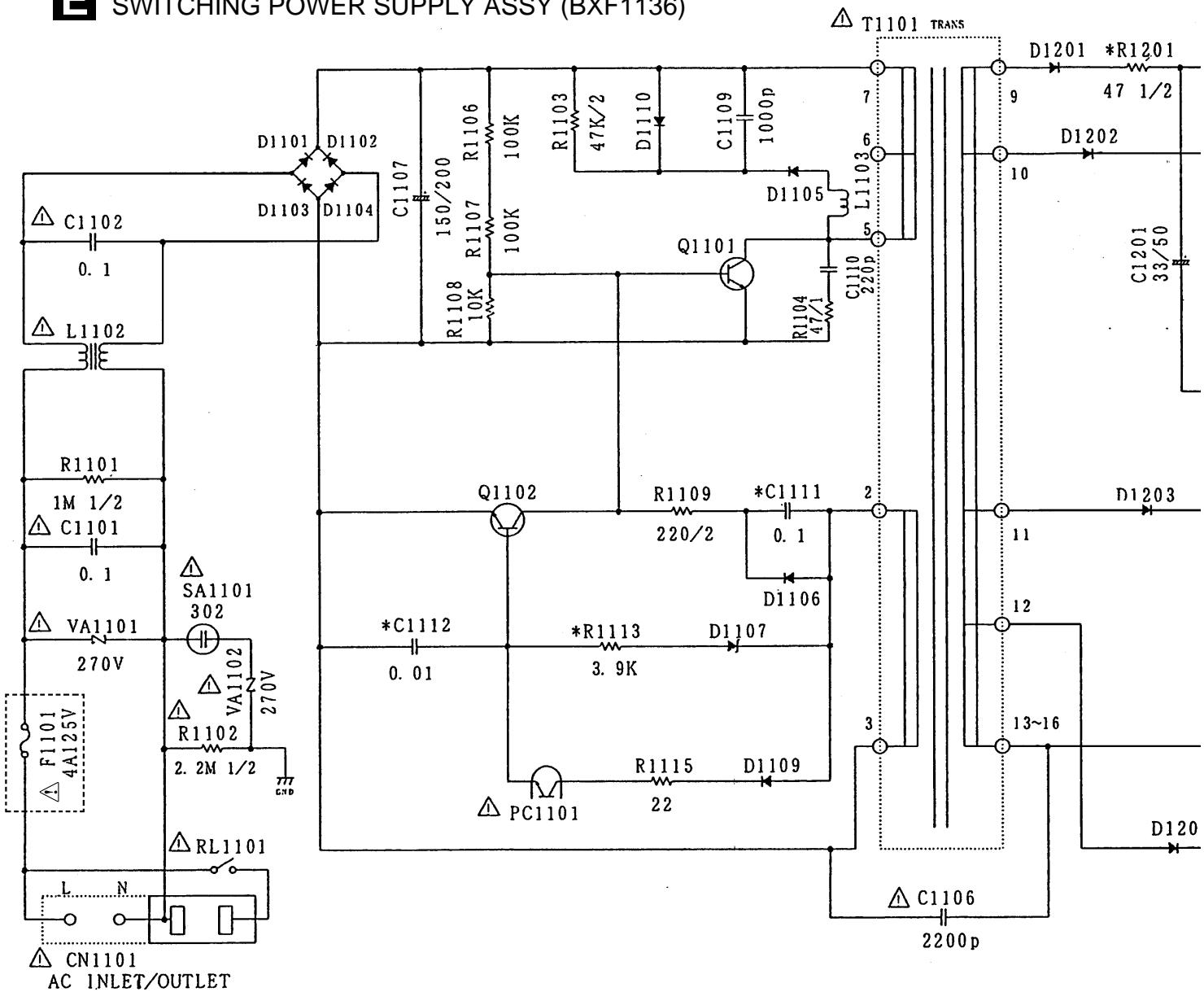


C BWZ1906



B C D

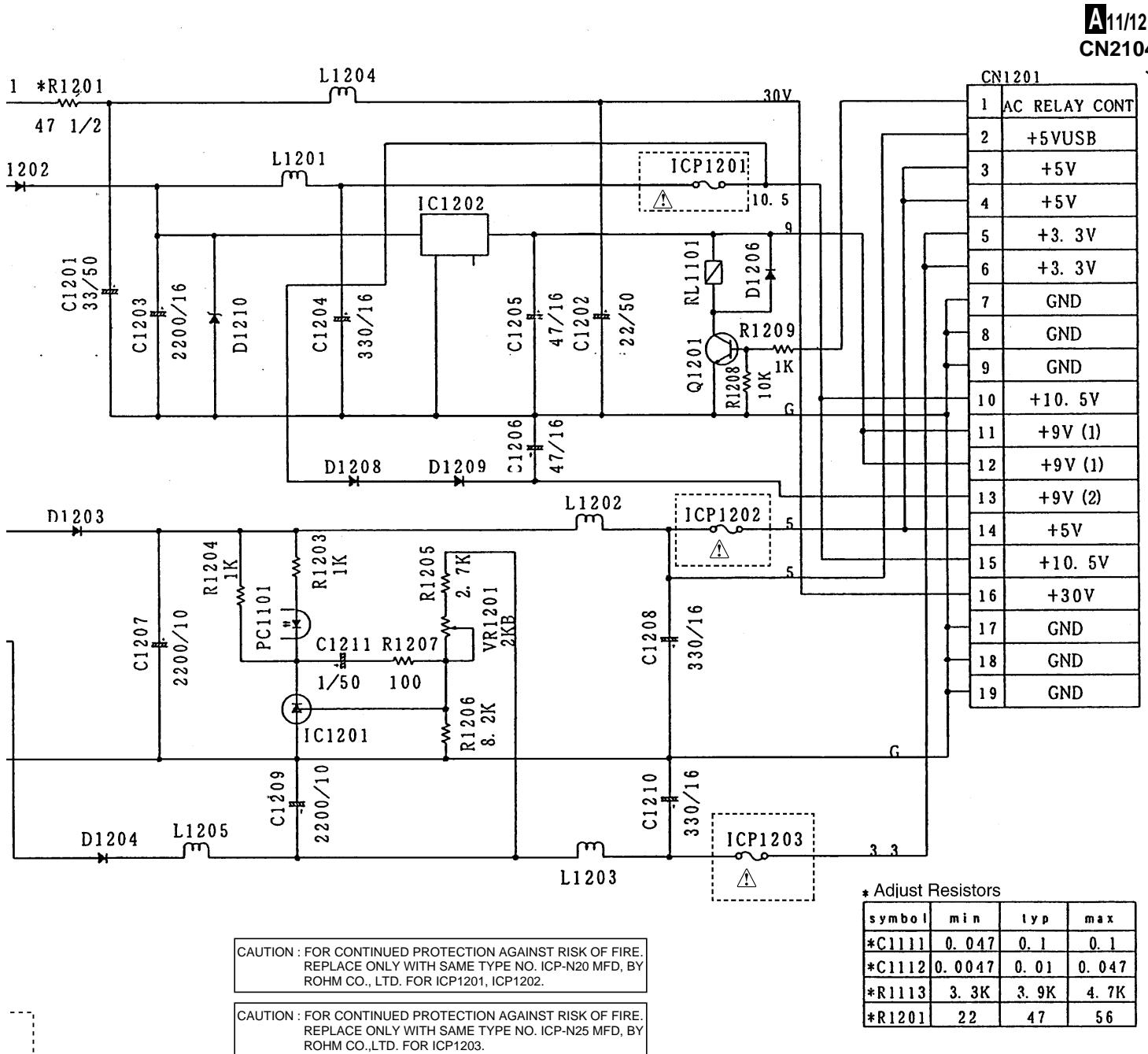
3.15 SWITCHING POWER SUPPLY ASSY

E SWITCHING POWER SUPPLY ASSY (BXF1136)

D1101	LT1505
D1102	LT1505
D1103	LT1505
D1104	LT1505
D1105	AG01A or PR1005
D1106	11ES2 or ERA15-02
D1107	MTZJ3.0 or MA4030 or RD3.0JS
D1109	ISS133 or ISS119 or MA165
D1110	1A4 or
Q1101	2SC5241
Q1102	2SD1781
PC1101	ON3131 or ON3171 or PC123 or PC817

D1201	AG01A or PR1005
D1202	RK46 or D3S6M
D1203	RK44 or SB340
D1204	RK44 or SB340
D1206	ISS133 or ISS119 or MA165
D1208	1N4005
D1209	1N4005
D1210	MA2150 or BZX85C15
IC1201	AN1431T or HA17431P or MM1431
IC1202	PQ09RD08 or KA78R09 or PQ09RD11 or PQ09RF11
Q1201	2SC2412

* These parts are not supplied as service parts.



• NOTE FOR FUSE REPLACEMENT

CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS ONLY.

1

- The supplied repair parts are only following [] marked parts.

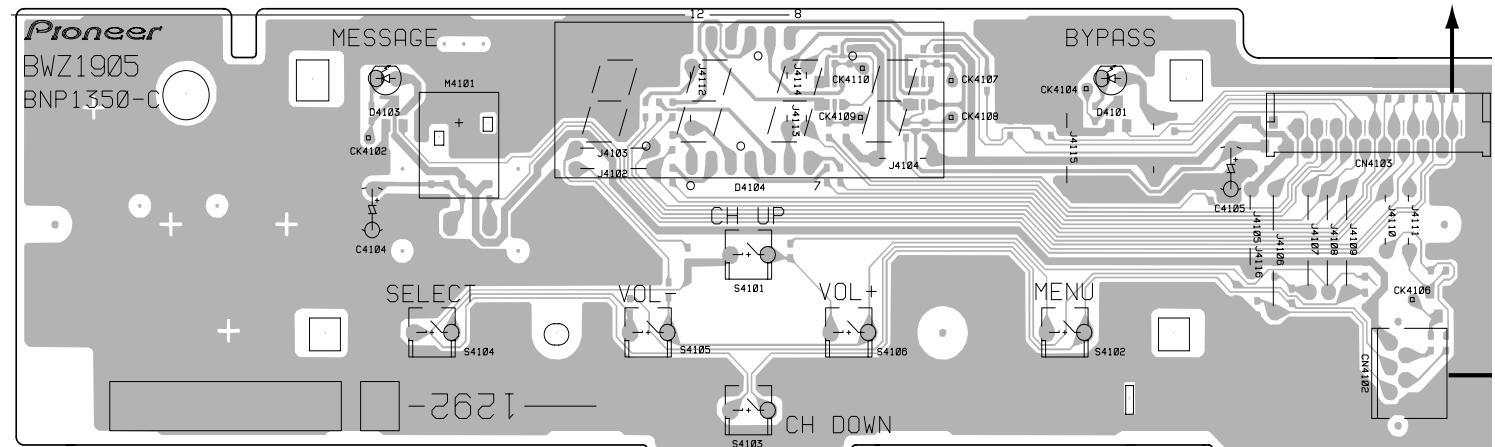
F1101 : BEK1010
 ICP1201 : ICP-N20
 ICP1202 : ICP-N20
 ICP1203 : ICP-N25

BD-V1100, BD-V1110

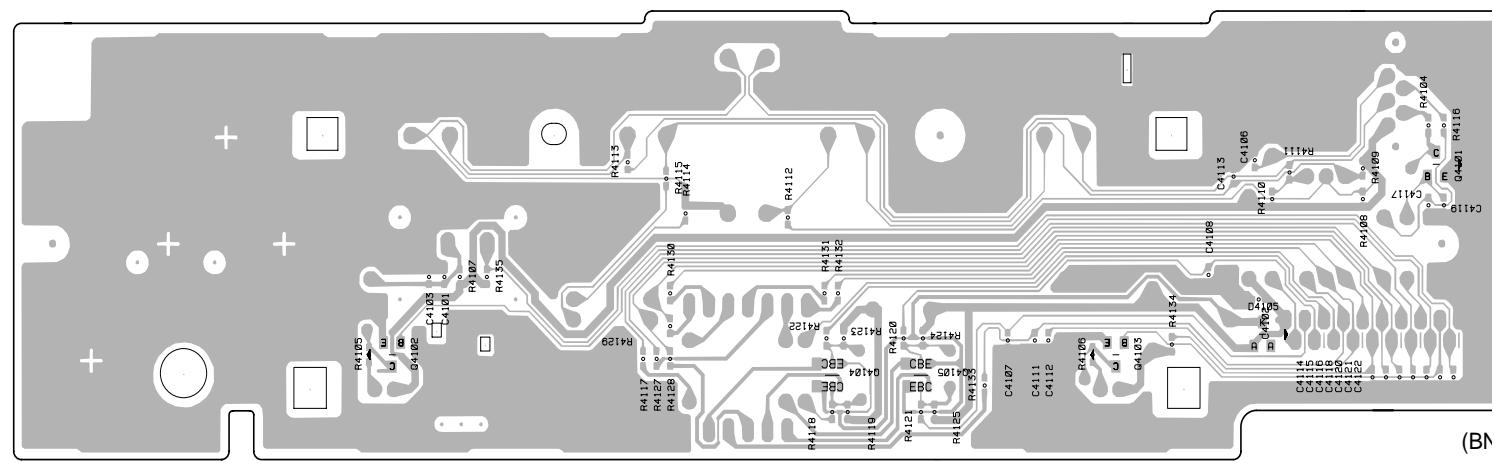
4. PCB CONNECTION DIAGRAM

4.1 FRONT PANEL,POWER SWITCH and CARD ASSYS

B FRONT PANEL ASSY



(BNP135)



(B1)

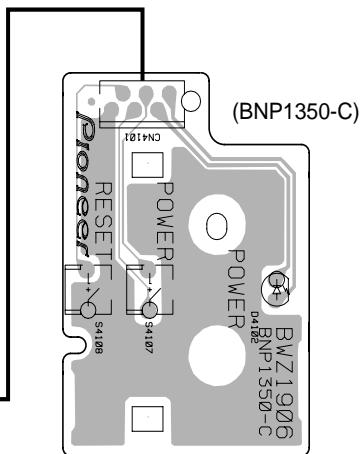
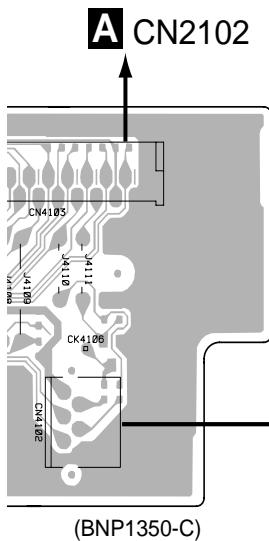
Q4102

Q4104

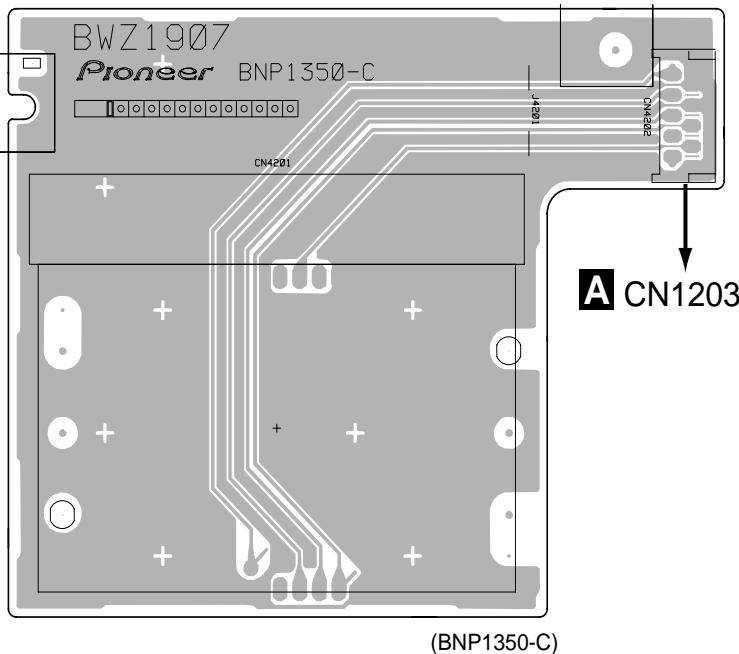
Q4105

Q4103

Q4101



D CARD ASSY



SIDE A

NOTE FOR PCB DIAGRAMS :

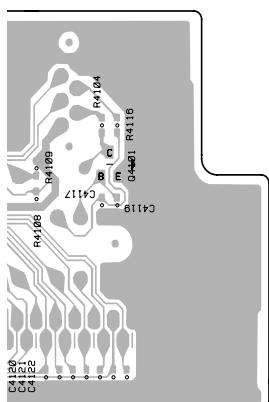
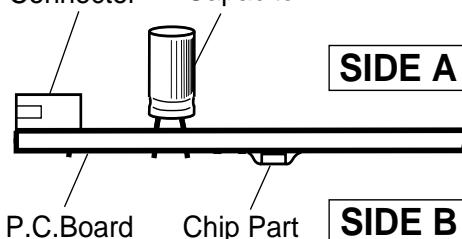
- Part numbers in PCB diagrams match those in the schematic diagrams.
- A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

- View point of PCB diagrams.

Connector Capacitor

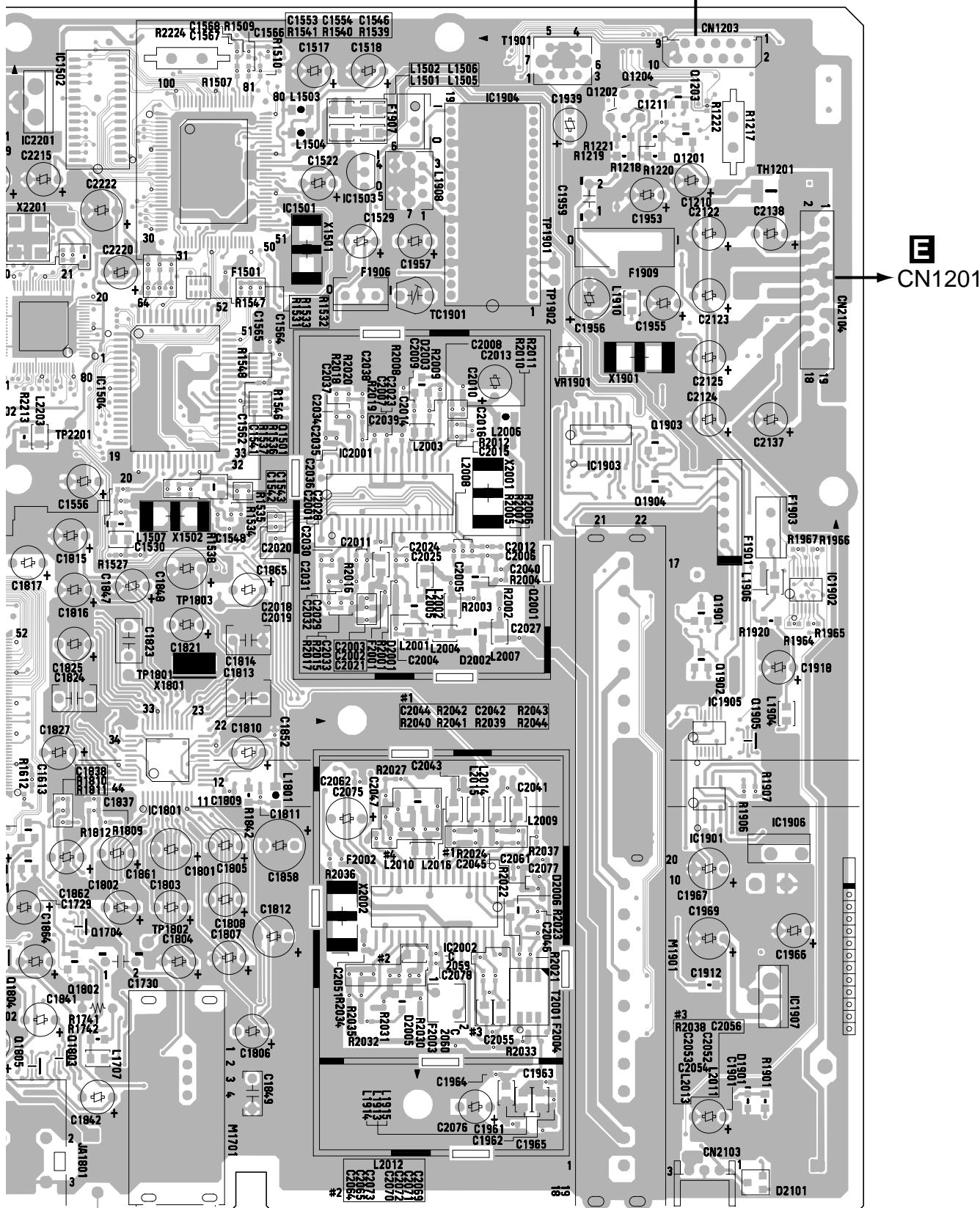


Q4101

D CN4202

SIDE A

This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.



(BNP1351-B)

C2201
IC1102

IC1504

Q1704

805 Q1802 Q1803

IC1501 IC1503

IC2001

IC1904 Q1202 Q1204 Q1201 Q1203

Q2001

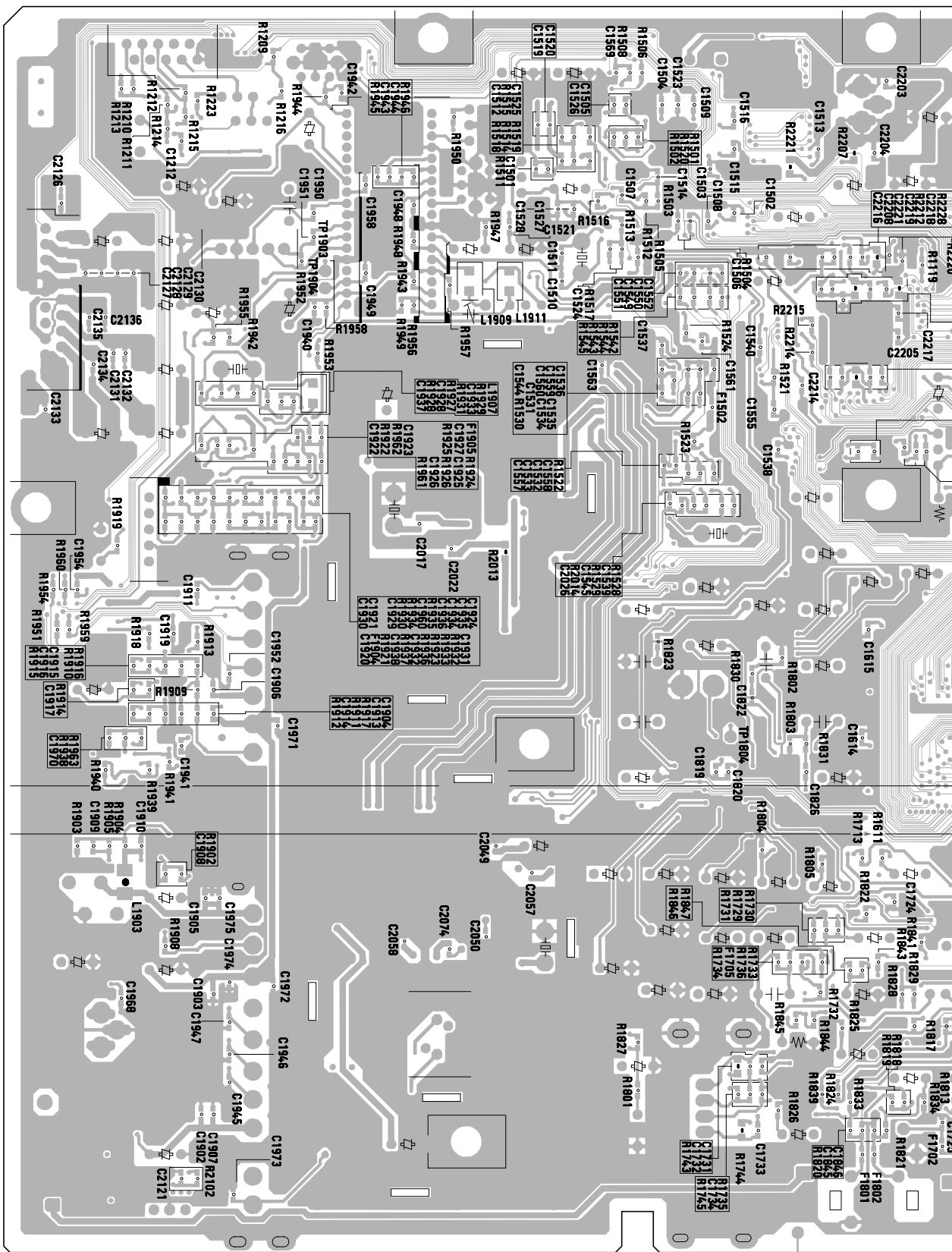
IC1903

Q1901 Q1902
IC1905 Q11905
IC1901 IC1906 IC1907

A

BD-V1100, BD-V1110

A MAIN ASSY

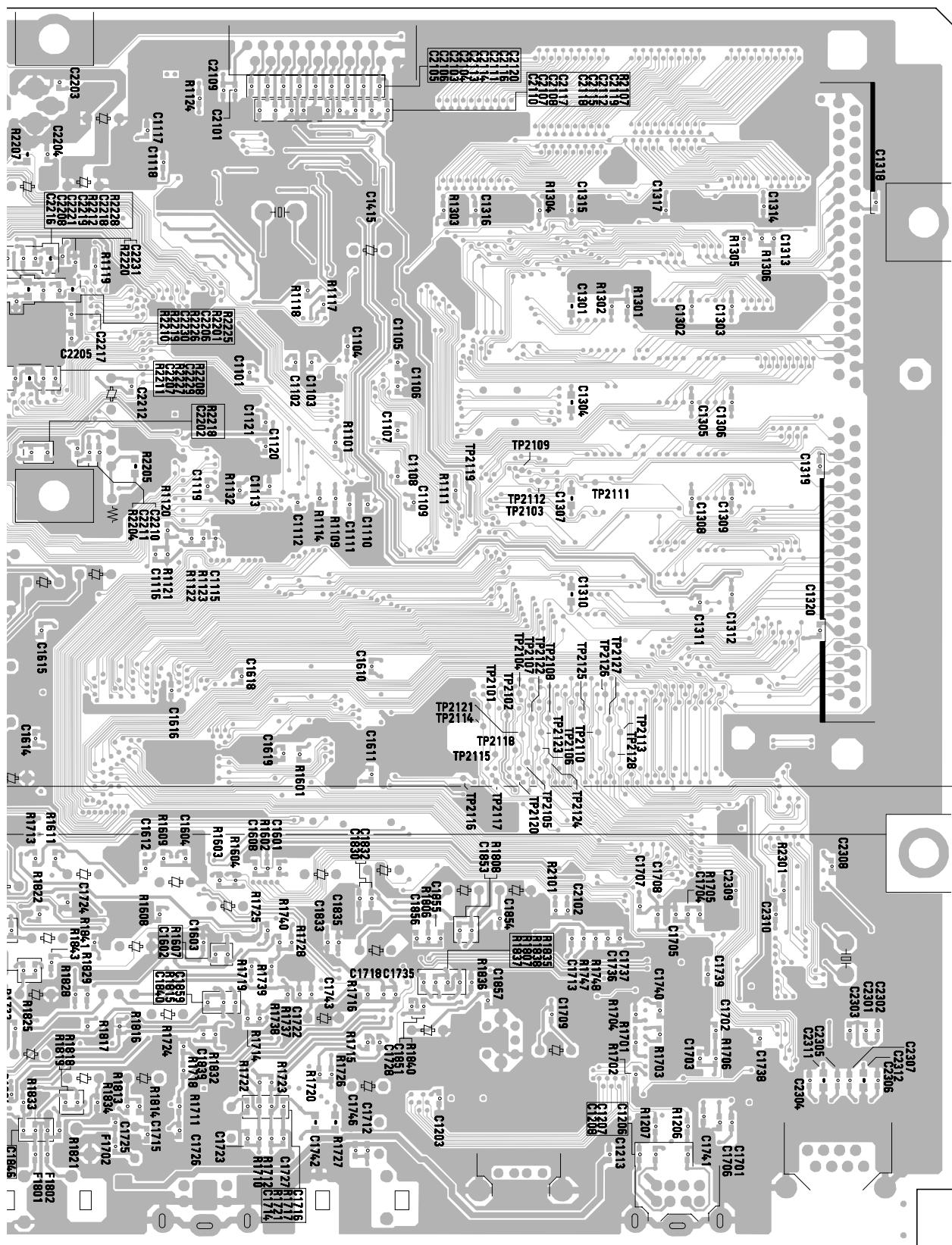


A

BD-V1100, BD-V1110

- This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.

SIDE B



(BNP1351-B)

5. PCB PARTS LIST

NOTES: • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	\rightarrow	56×10^1	\rightarrow	561	RDI/4PU [5] [6] [1] J
47k Ω	\rightarrow	47×10^3	\rightarrow	473	RDI/4PU [4] [7] [3] J
0.5 Ω	\rightarrow	R50			RN2H [R] [5] [0] K
1 Ω	\rightarrow	1R0			RSIP [1] [R] [0] K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	\rightarrow	562×10^1	\rightarrow	5621	RNI/4PC [5] [6] [2] [1] F
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CONTRAST OF PCB ASSEMBLIES

Mark	Symbol and Description	Part No.			Remarks
		BD-V1100 /KUXJ/1	BD-V1100 /KU/1	BD-V1110 /KUXJ	
Δ	MAIN ASSY COMPLEX ASSY └─ FRONT PANEL ASSY └─ POWER SWITCH ASSY └─ CARD ASSY SWITCHING POWER SUPPLY ASSY	BWX1141 BWM1292 BWZ1905* ¹ BWZ1906* ² BWZ1907* ³	BWX1141 BWM1296 BWZ1910* ¹ BWZ1911* ² BWZ1912* ³	BWX1141 BWM1292 BWZ1905* ¹ BWZ1906* ² BWZ1907* ³	* ¹ Constructed same. * ² Constructed same. * ³ Constructed same.
	SWITCHING POWER SUPPLY ASSY	BXF1136	BXF1136	BXF1136	

Mark	No.	Description	Part No.
------	-----	-------------	----------

A MAIN ASSY

SEMICONDUCTORS

IC1102	24LC16B
IC1104	570215
IC1802	AD1859JRS
IC1703,IC1704	AD8052AR
IC1301-IC1304	AS4C1M16E5-60JC

IC1501	BCM3116KPF
IC1502	CY7C199-15VC
IC1602	LM317LD
IC1305-IC1308	MBM2F800BA-70PFTN
IC1903	MC44306D

IC1901	NJM12904M
IC1803	NJM2068MD
IC2201	NJM7805FA
IC1907	NJM78M05FA
IC1904	PA5015C

IC1201	PDIUSBP11APW
IC1906	PQ09RD1B
IC1103	PST9228N
IC1101	SCABIP2BUAMTA
IC1504	SS38122FB21

IC1701	STI4600ACV
IC1603	STI5600ACV
IC1902	TC74ACT08FT
IC1905	TC74HC4066AFT
IC1702	TC74HCU04AF

IC1401	TC74LVX04FT
--------	-------------

Mark	No.	Description	Part No.
------	-----	-------------	----------

IC2101	TC74VHC32FT
IC2002	TDA8050T
IC2001	TDA8051T
IC1801	TDA9852H

IC2202	TVP5020CPFP
IC1503	UPC29L33J
IC1601	UPD4516161AG5-A10B
Q1201,Q1701,Q1802	2SA1037K
Q1202,Q1204	2SA854S

Q1702,Q2201	2SC1740S
Q1101,Q1203,Q1301,Q1801	2SC2412K
Q1401,Q1402,Q1501,Q1903,Q1904	2SC2714
Q2001	2SC2714
Q1901,Q1902	2SC5084

Q1703	DTC143ZKA
Q1704,Q1803-Q1805,Q1905	HN1C01FU
D2001-D2003	1SV242
D2006	DAN202K
D1201-D1204,D1601,D1701-D1703	DAN217

D1801,D1802,D2101	DAN217
D1401,D1501	HVU359
D2004,D2005	SVC203CP
D1901	UDZ24B
△ TH1201	1812L110PR

COILS AND FILTERS

F1906	ATF-114
F1203,F1204	ATF1124
F1907	ATF1132
L1908 Sync Coil	BTC1016
T2001	BTC1019

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
T1901		FM Det. Coil	BTE1011		C1206-C1208,C1413,C2047	CCSRCH271J50	
F2003		Molded Coil	BTE1028		C1211	CCSRCH331J50	
F1903			BTF1078		C1404,C1405,C1511,C1542,C1543	CCSRCH390J50	
F1901		SAW Filter	BTF1079		C2041-C2044	CCSRCH391J50	
F1909		SAW Filter	BTF1082		C1201,C1202,C1204,C1205	CCSRCH470J50	
F1401-F1403			BTF1084		C1562-C1565,C1837,C1838,C1911	CCSRCH470J50	
F1205,F1701,F1703,F1704			BTF1086		C1945-C1947,C1952	CCSRCH470J50	
F1404			BTF1088		C2056	CCSRCH471J50	
L1503,L1504,L1903,L2006			BTH1087		C1931	CCSRCH4R0C50	
L2101,L2102,L2204			BTH1087		C1964,C1973	CCSRCH560J50	
L1701,L1702,L1708,L1801-L1804			BTH1088		C1411	CCSRCH5R0C50	
L2008			DTL1038		C1406,C1410,C2024,C2029,C2034	CCSRCH680J50	
L1401,L1403,L2001,L2002			LCTAR12J2520		C2025,C2032,C2037	CCSRCH7R0D50	
L1907			LCYA100J2520		C1608,C1855,C2031,C2036	CCSRCH820J50	
L2009,L2014-L2016			LCYA101J2520		C1937,C2067,C2068	CCSRCH8R0D50	
L1909			LCYA120J2520		C1856,C2030,C2035,C2078	CCSRCH9R0D50	
L1911			LCYA150J2520		C1720,C1746,C1907	CCSRCK1R0C50	
L1404			LCYA1R5J2520		C1520	CCSRCK2R0C50	
L1904,L1910			LCYA220J2520		C1401,C1517,C1518,C1522,C1529	CEHAT100M50	
L2010			LCYA22NJ2520		C1556,C1605-C1607,C1609,C1729	CEHAT100M50	
L1507,L2201,L2203			LCYA2R2J2520		C1808,C1828,C1829,C1831,C1834	CEHAT100M50	
L1704-L1707			LCYA3R3J2520		C1836,C1850,C1861-C1863,C1901	CEHAT100M50	
L1601			LCYA470J2520		C1918,C1955,C1966,C2122-C2125	CEHAT100M50	
L2005			LCYA47NJ2520		C2137,C2138,C2201,C2213,C2215	CEHAT100M50	
L2202			LCYA4R7J2520		C2220	CEHAT100M50	
L2003,L2012			LCYA56NJ2520		C1710,C1801,C1812,C1843,C1844	CEHAT101M25	
L1501,L1502,L1505,L1506			LCYA5R6J2520		C2209,C2222	CEHAT101M25	
L2007			LCYA68NJ2520		C1719,C1721	CEHAT102M16	
L1402			LCYAR22J2520		C1806,C1807,C1841,C1842,C1953	CEHAT1R0M50	
L1906			LCYAR27J2520		C1744,C1858,C1860	CEHAT221M25	
L1914,L1915,L2011,L2013			LCYAR47J2520		C1210,C1802,C1803,C1817,C1818	CEHAT2R2M50	
L2004			LCYAR56J2520		C1821,C1825,C1864	CEHAT2R2M50	
L1913			LCYAR68J2520		C2076	CEHAT470M25	
L1703			PTL1003		C1956,C2075	CEHAT470M50	
F1201,F1202,F1206-F1208			VTF1084		C1810,C1815,C1816,C1847	CEHAT4R7M50	
F1501,F1502,F1601,F1602,F1702			VTF1084		C2013	CEHATR10M50	
F1705,F1801,F1802,F1904,F1905			VTF1084		C1957	CEHATR47M50	
F2001,F2002,F2004			VTF1084		C1823,C1824	CFTLA154J50	
					C1814	CFTLA224J50	
					C1849	CFTLA473J50	
CAPACITORS							
TC1901 (2.3pF – 10pF)			ACM-014		C1813	CFTLA474J50	
C1865			BCH1030		C1711	CKSQYF104Z50	
C1939			BCH1037		C1301,C1304,C1307,C1310,C1414	CKSQYF105Z16	
C1848			BCH1047		C1742,C1912	CKSQYF105Z16	
C1804,C1805			BCH1048		C1530,C1531,C1541,C1544	CKSRYB102K50	
C1827			BCH1049		C1549-C1554,C1717,C1909,C1921	CKSRYB102K50	
C1967			BCH1069		C1923,C1929,C1950,C1951,C1958	CKSRYB102K50	
C1969			BCH1070		C1970,C2010,C2011,C2018-C2020	CKSRYB102K50	
C2071,C2072			CCSRCH100D50		C2026,C2045,C2052,C2053	CKSRYB102K50	
C1403,C1566-C1569,C1724,C1725			CCSRCH101J50		C2061,C2062,C2074,C2077	CKSRYB102K50	
C1737,C1839,C1840,C1908,C1961			CCSRCH101J50		C1101-C1113,C1115,C1116	CKSRYB103K50	
C1963,C2027,C2033,C2038			CCSRCH101J50		C1119-C1121,C1702-C1704,C1741	CKSRYB103K50	
C2059			CCSRCH120J50		C1913,C1915,C1916,C1932	CKSRYB103K50	
C2069,C2070			CCSRCH121J50		C1934-C1936,C1938,C1954,C1960	CKSRYB103K50	
C2055			CCSRCH150J50		C2004,C2005,C2048	CKSRYB103K50	
C1313,C1555			CCSRCH151J50		C1819,C1820,C2064	CKSRYB153K50	
C1407,C2017,C2051			CCSRCH180J50		C1851,C1853	CKSRYB222K50	
C1962			CCSRCH200J50		C1712	CKSRYB471K50	
C2063,C2066			CCSRCH220J50		C2210,C2211	CKSRYB681K50	
C1714-C1716,C1723,C1726,C1727			CCSRCH221J50		C1604,C2016	CKSRYB682K50	
C1731,C1732,C2008,C2009,C2015			CCSRCH221J50		C1845,C1846	CKSRYB821K50	
C2103-C2120			CCSRCH221J50		C1822,C1826	CKSRYB822K50	
C1510,C1519,C1745,C2054			CCSRCH270J50				

BD-V1100, BD-V1110

Mark	No.	Description	Part No.
	C1114,C1203,C1302,C1303	CKSRYF103Z50	
	C1305,C1306,C1308,C1309	CKSRYF103Z50	
	C1311,C1312,C1314-C1320,C1402	CKSRYF103Z50	
	C1409,C1514,C1545-C1548,C1706	CKSRYF103Z50	
	C1708,C1713,C1733-C1735	CKSRYF103Z50	
	C1738-C1740,C1902-C1906,C1917	CKSRYF103Z50	
	C1942-C1944,C1948,C1949,C2040	CKSRYF103Z50	
	C2102,C2121,C2219,C2230,C2231	CKSRYF103Z50	
	C1117,C1118,C1212,C1213,C1408	CKSRYF104Z16	
	C1412,C1501,C1507,C1512,C1513	CKSRYF104Z16	
	C1521,C1524-C1526,C1601-C1603	CKSRYF104Z16	
	C1610-C1619,C1701,C1705,C1707	CKSRYF104Z16	
	C1709,C1718,C1722,C1728,C1736	CKSRYF104Z16	
	C1743,C1809,C1811,C1830	CKSRYF104Z16	
	C1832,C1833,C1835,C1852,C1854	CKSRYF104Z16	
	C1857,C1859,C1910,C1914	CKSRYF104Z16	
	C1919,C1920,C1922,C1924-C1928	CKSRYF104Z16	
	C1930,C1933,C1940,C1941,C1968	CKSRYF104Z16	
	C1971,C1972,C2001-C2003	CKSRYF104Z16	
	C2006,C2007,C2012,C2014	CKSRYF104Z16	
	C2021-C2023,C2028,C2039,C2046	CKSRYF104Z16	
	C2049,C2050,C2057,C2060,C2065	CKSRYF104Z16	
	C2073,C2101,C2126-C2136	CKSRYF104Z16	
	C2202-C2208,C2212,C2214	CKSRYF104Z16	
	C2216-C2218,C2221,C2229	CKSRYF104Z16	
	C1532-C1535	CKSRYF334Z16	
	C1959	CQMBA393J50	
	C1730	CQMBA821J50	

RESISTORS

R1546,R1547	RAB4C101J
R1421-R1423	RAB4C103J
R1419,R1548,R2203,R2206	RAB4C181J
R1416-R1418,R1420,R1708,R1709	RAB4C330J
R2103-R2106	RAB4C470J
R1741,R2217	RD1/2VM271J
R1707	RD1/2VM750J
R2013,R2216	RS1/10S100J
R1920	RS1/10S101J
R1221	RS1/10S103J
R1218	RS1/10S121J
R1727,R1901	RS1/10S182J
R2225-R2228	RS1/10S2R2J
R1219	RS1/10S471J
R1744,R2207,R2221	RS1/10S4R7J
R1208	RS1/10S510J
R1842	RS1/10S5R1J
R1220	RS1/10S681J
R1742,R1743,R2205,R2213	RS1/10S750J
R1815,R1832	RS1/16S1002F
R1609	RS1/16S1211F
R1801	RS1/16S1580F
R1714-R1716	RS1/16S2000F
R1722-R1724	RS1/16S2211F
R1607	RS1/16S2370F
R1120	RS1/16S3300F
R1717,R1718,R1721	RS1/16S3601F
R1811,R1812	RS1/16S3742F
R1608	RS1/16S4020F
R1121	RS1/16S5601F
R1809,R1810	RS1/16S5621F
R1827	RS1/16S8251F
R1204,R1205	RS1/8S24R3F

Mark	No.	Description	Part No.
	R2224		RS1MMF120J
	R1217		RS1MMF1R5J
	VR1701 (1kΩ)		ACP1089
	VR1901 (2.2kΩ)		ACP1090
	VR1801 (4.7kΩ)		ACP1091
	Other Resistors		RS1/16S□□□J

OTHERS

△ M1901	Up/Down Tuner	BXF1091
△ M1701	RF Modulator	BXF1062
CN1203	10P FFC Connector	9604S-10C
CN2102	20P FFC Connector	9604S-20C
JA1801	3P Pin Jack	BKB1019
CN1701	4P Mini DIN Socket	BKP1091
CN2104	19P Plug	BKP1120
CN1202	8P Mini DIN Socket	BKP1127
CN1201	USB Connector	BKP1138
CN2101	100P Connector (RCPT)	BKP1139
	FSK Case 1	BNK1126
X1401	(27MHz)	BSS1061
X1801	(514.5KHz)	BSS1079
X1901	(26.096MHz)	BSS1080
X1501	(16.384MHz)	BSS1081
X1502	(24.704MHz)	BSS1082
X2001,X2002	(4.000MHz)	BSS1084
X2201	(26.800MHz)	BSS1086
CN2103	3P Side Post	S3B-EH
JA1701	1P Pin Jack	VKB1077

COMPLEX ASSY

OTHERS

J8005	JUMP WIRE	D15A06-075-2651
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B FRONT PANEL ASSY

SEMICONDUCTORS

Q4101-Q4103	DTC114TK
Q4104,Q4105	HN1A01F
D4101,D4103	BEL1014
D4104	BEL1042
D4105	DAN202K

SWITCHES AND RELAYS

S4101-S4106	ASG1051
-------------	---------

CAPACITORS

C4106-C4108,C4111-C4122	CCSRCH470J50
C4104,C4105	CEHAR100M16
C4101	CKSRYF103Z50
C4102,C4103	CKSRYF104Z16

RESISTORS

Other Resistors	RS1/16S□□□J
-----------------	-------------

OTHERS

CN4103	20P FFC Connector	9607S-20F
M4101	IR RECEIVER	BXX1033

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
-------------	------------	--------------------	-----------------

C POWER SWITCH ASSY

SEMICONDUCTORS

D4102 BEL1014

SWITCHES AND RELAYS

S4107 ASG1051

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
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D CARD ASSY

OTHERS

CN4202	10P FFC Connector	9607S-10F
CN4201	8P Card Connector	BKP1117

E SWITCHING POWER SUPPLY ASSY

F1101 (4A)	BEK1010	
ICP1201	IC Protector	ICP-N20
ICP1202	IC Protector	ICP-N20
ICP1203	IC Protector	ICP-N25

BD-V1100, BD-V1110

6. ADJUSTMENT

Note : Refer to the "Service Know-how (SKB54005)" for the details.

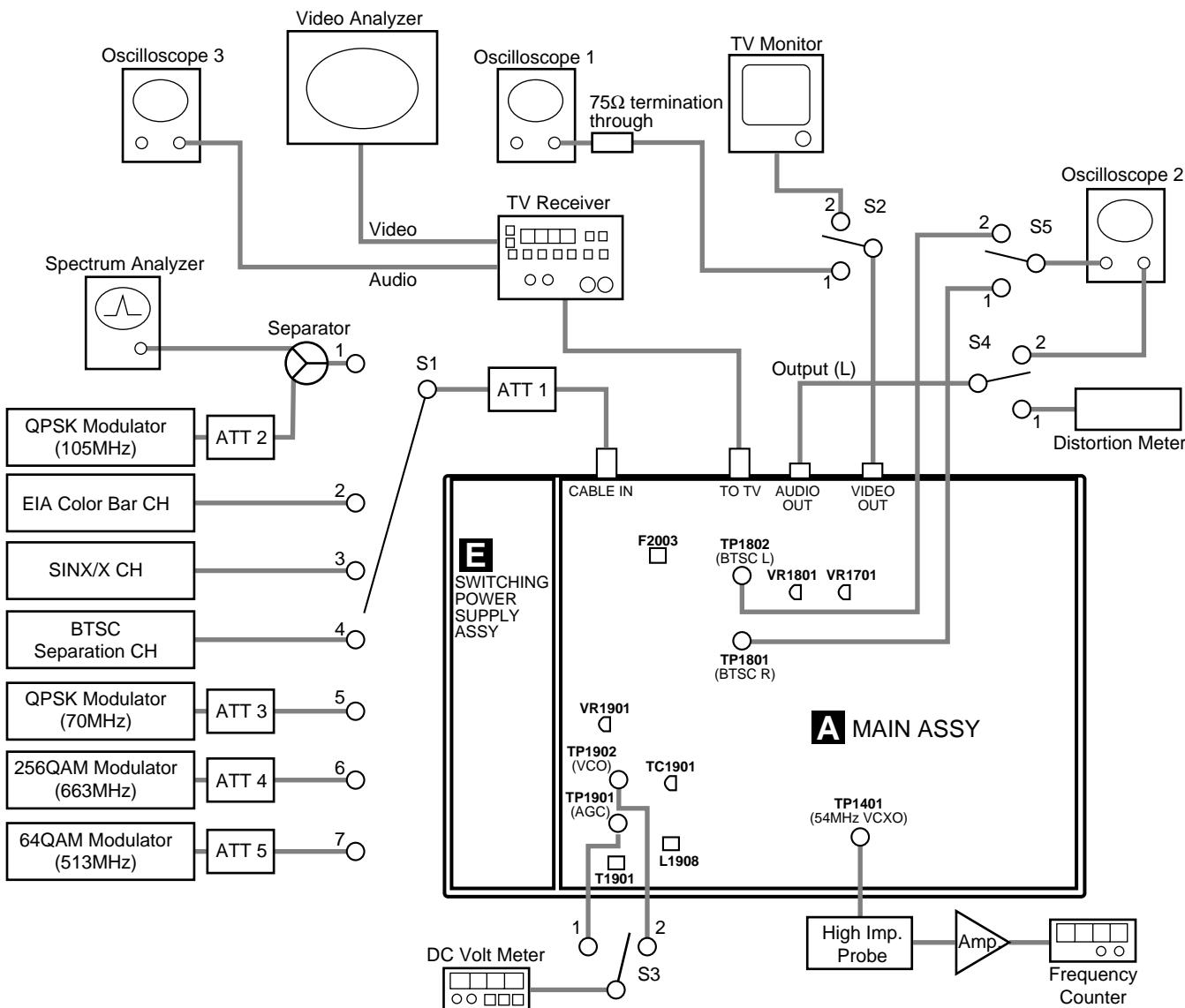


Fig.1 Adjustment Connections

• Input Signals

1	QPSK Modulator	Center Freq. = 105MHz	All slots have to be opened. (for QPSK Tx Adj.)
2	EIA Color Bar	Video	EIA Color Bar 87.5% Mod.
		Audio	1kHz Sin Wave ± 25kHz Dev.
3	SINX/X	Video	SINX/X (0.5MHz~3.75MHz)
		Audio	400Hz Sin Wave ± 25kHz Dev.
4	BTSC Separation	Video	Black 0 IRE Flat Signal
		Audio	L = 300Hz, R = 3.1kHz Sin Wave 14% Mod. Each CH
5	QPSK Modulator	Center Freq. = 70MHz	_____
6	256QAM Modulator	Center Freq. = 663MHz	Video Stream = Full White APL100% MPEG2 Video
			Audio Stream = 1kHz FS -20dB MPEG1 Audio
7	64QAM Modulator	Center Freq. = 513MHz	Data channel

Note 1 : Perform the NTSC ch setting if necessary.

2 : Set the Fv/Fa difference to -15dB.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TROUBLESHOOTING

Note : Refer to the "Service Know-how (SKB54005)" for the details.

7.2 IC

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

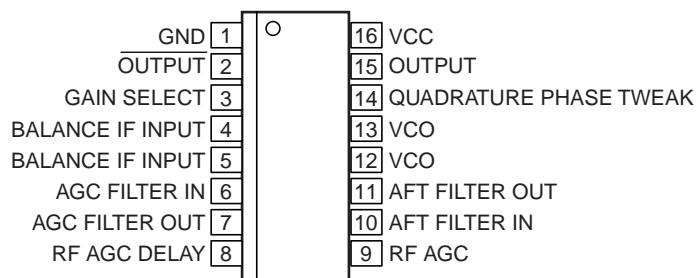
• List of IC

MC44306D	TDA8051T	TDA8050T	SCABIP2BUAMTA	570215	MBM29F800BA-70PF
SS38122FB21	BCM3116KPF	STI5600ACV	STI4600ACV	TDA9852H	AD1859JRS
TVP5020CPFP	PDIUSBP11APW				

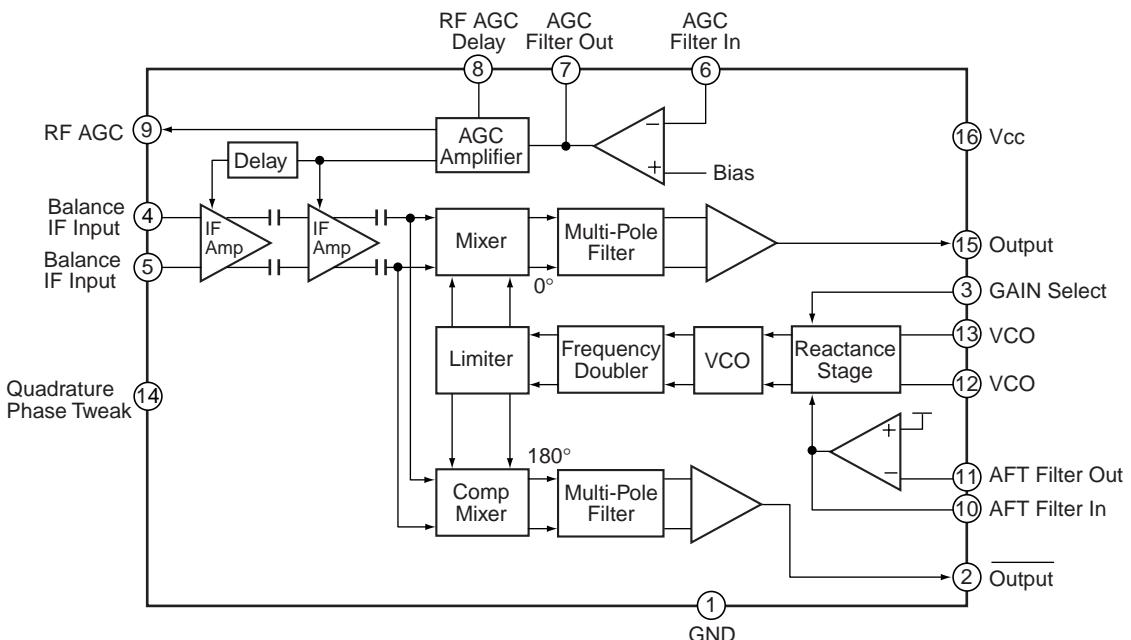
■ MC44306D [MAIN ASSY (1/12) : IC1903]

- IF Down Converter IC

- Pin Arrangement



- Block Diagram

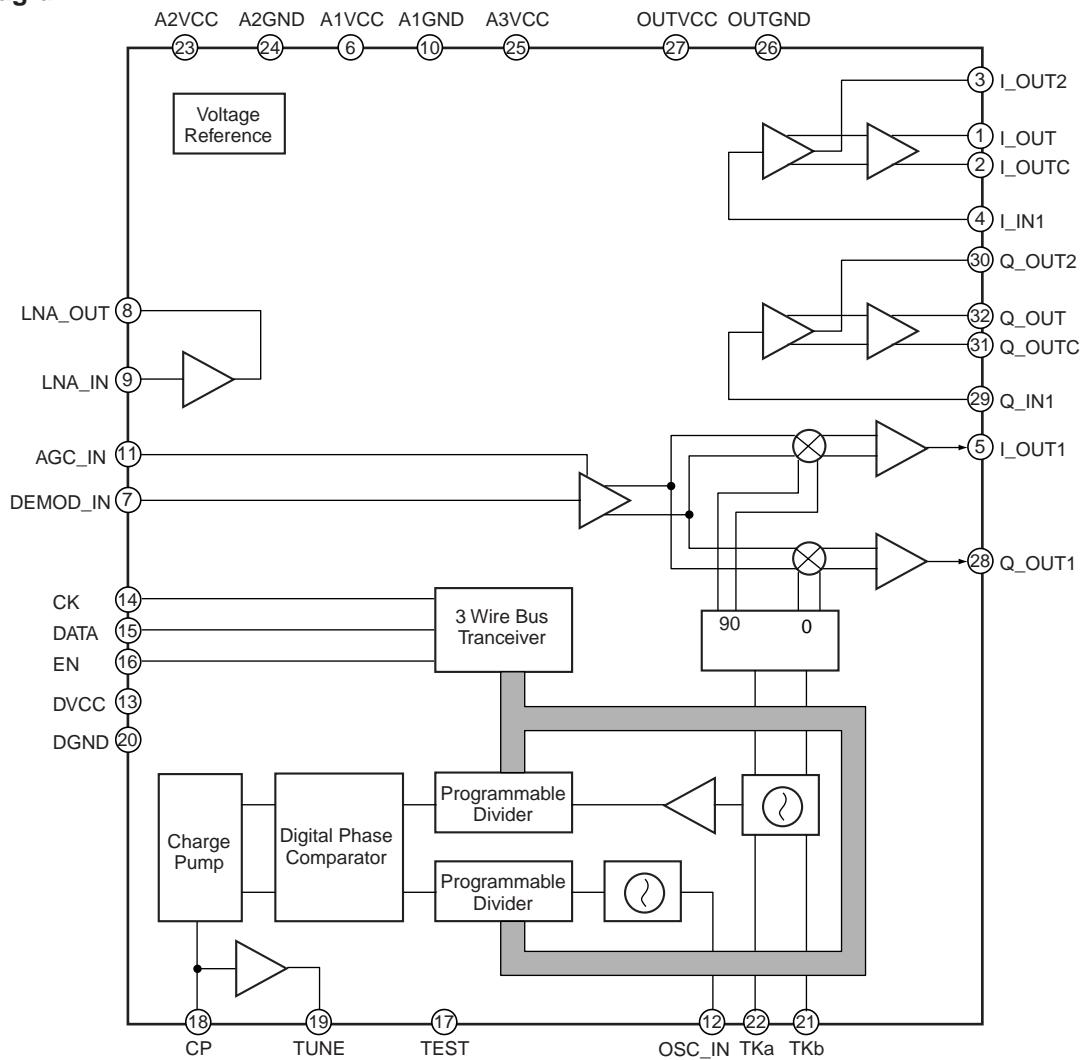


BD-V1100, BD-V1110

■ TDA8051T [MAIN ASSY (2/12) : IC2001]

- QPSK Receiver IC

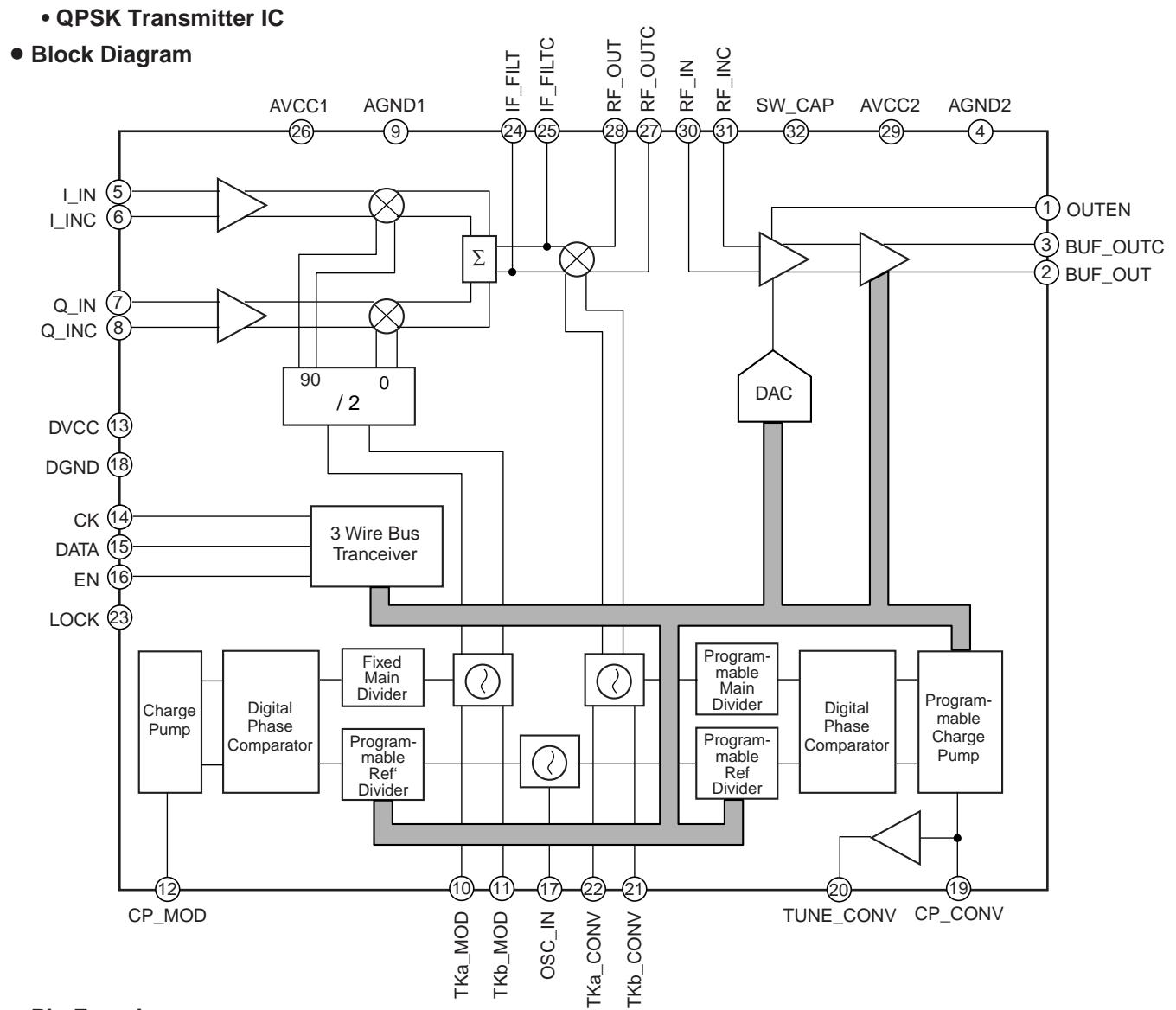
• Block Diagram



• Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	I_OUT	I data buffered balanced output	17	TEST	Test pin : do not connect
2	I_OUTC	I data buffered balanced output	18	CP	Charge pump output for PLL loop filter
3	I_OUT2	I data filtered output	19	TUNE	Tuning voltage output
4	I_IN1	Input to active filter amplifier for I data	20	DGND	Digital DC ground
5	I_OUT1	I data raw output	21	TKb	VCO tank circuit input
6	A1VCC	Analog DC supply	22	TKa	VCO tank circuit input
7	DEMOD_IN	Demodulator RF input	23	A2VCC	Analog DC supply
8	LNA_OUT	Low noise amplifier RF output	24	A2GND	Analog DC ground
9	LNA_IN	Low noise amplifier RF input	25	A3VCC	Analog DC supply
10	A1GND	Analog DC ground	26	OUTGND	Output amplifiers DC ground
11	AGC_IN	AGC control voltage input	27	OUTVCC	Output amplifiers DC supply
12	OSC_IN	Oscillator input	28	Q_OUT1	Q data raw output
13	DVCC	Digital DC supply	29	Q_IN1	Input to active filter amplifier for Q data
14	CK	3 wire bus serial control Clock	30	Q_OUT2	Q data filtered output
15	DATA	3 wire bus serial control Data	31	Q_OUTC	Q data buffered balanced output
16	EN	3 wire bus serial control Enable (active low)	32	Q_OUT	Q data buffered balanced output

■ TDA8050T [MAIN ASSY (2/12) : IC2002]



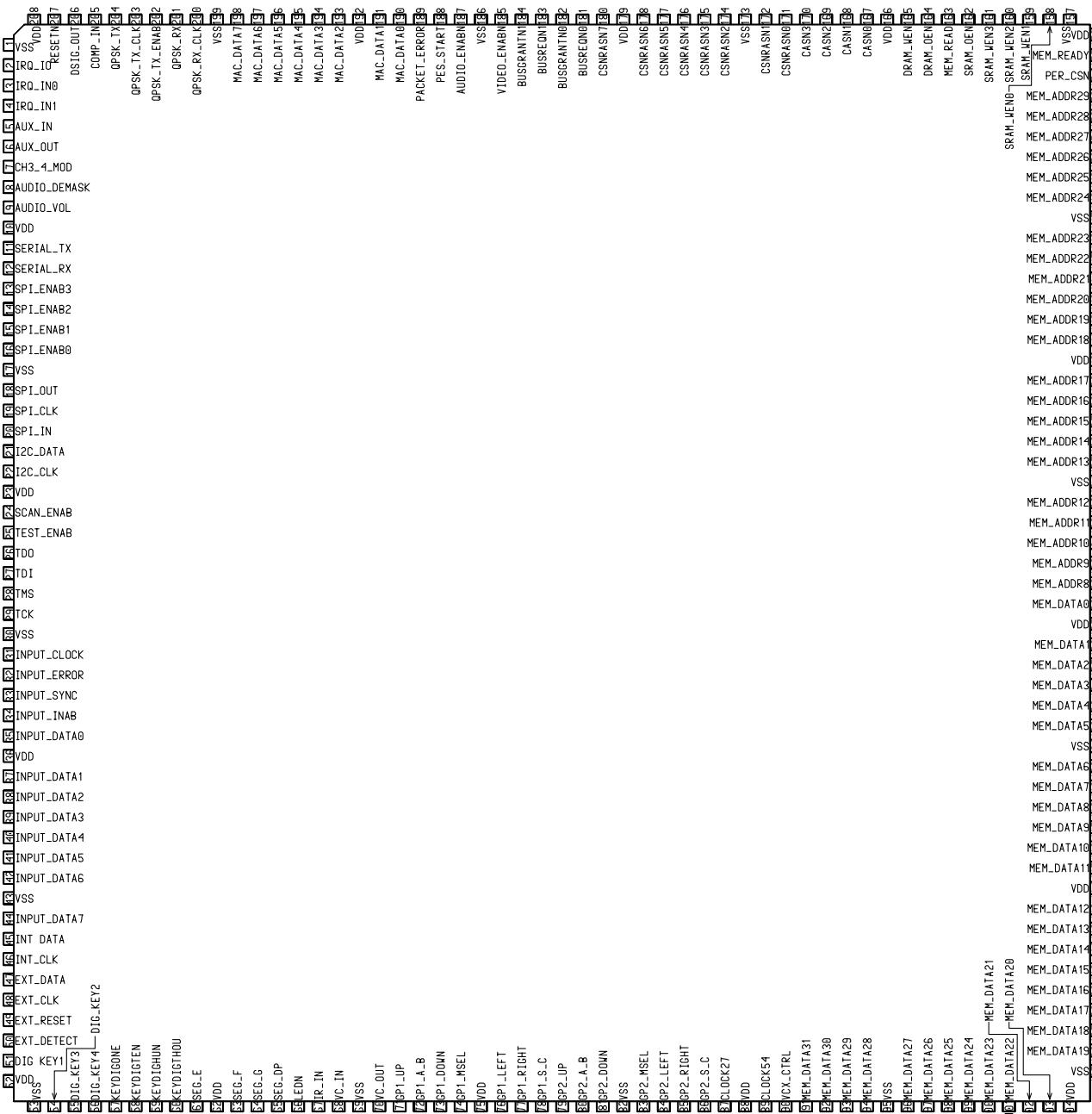
● Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	OUTEN	Output Enable	17	OSC_IN	Crystal oscillator input
2	BUF_OUT	Output amplifier balanced output	18	DGND	Digital ground
3	BUF_OUTC	Output amplifier balanced output	19	CP_CONV	Converter charge pump output for PLL loop filter
4	AGND2	Converter analog ground	20	TUNE_CONV	Tuning voltage output for converter VCO
5	I_IN	I balanced input	21	TKb_CONV	Converter VCO tank circuit input 1
6	I_INC	I balanced input	22	TKa_CONV	Converter VCO tank circuit input 2
7	Q_IN	Q balanced input	23	LOCK	Lock detect signal
8	Q_INC	Q balanced input	24	IF_FILT	IF balanced output to filter
9	AGND1	Modulator analog ground	25	IF_FILTC	IF balanced output to filter
10	TKa_MOD	Modulator VCO tank circuit input2	26	AVCC1	Modulator analog supply
11	TKb_MOD	Modulator VCO tank circuit input1	27	RF_OUTC	RF balanced output to filter
12	CP_MOD	Modulator charge pump output for PLL loop Filter	28	RF_OUT	RF balanced output to filter
13	DVCC	Digital supply	29	AVCC2	Converter analog supply
14	CK	3 wire bus serial control Clock	30	RF_IN	RF balanced input to programmable amplifier
15	DATA	3 wire bus serial control Data	31	RF_INC	RF balanced input to programmable amplifier
16	EN	3 wire bus serial control Enable	32	SW_CAP	Switch capacitor

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■ SCABIP2BUAMTA [MAIN ASSY (3/12) : IC1101

- CPU/DEMUX (BIP)
 - Pin Arrangement

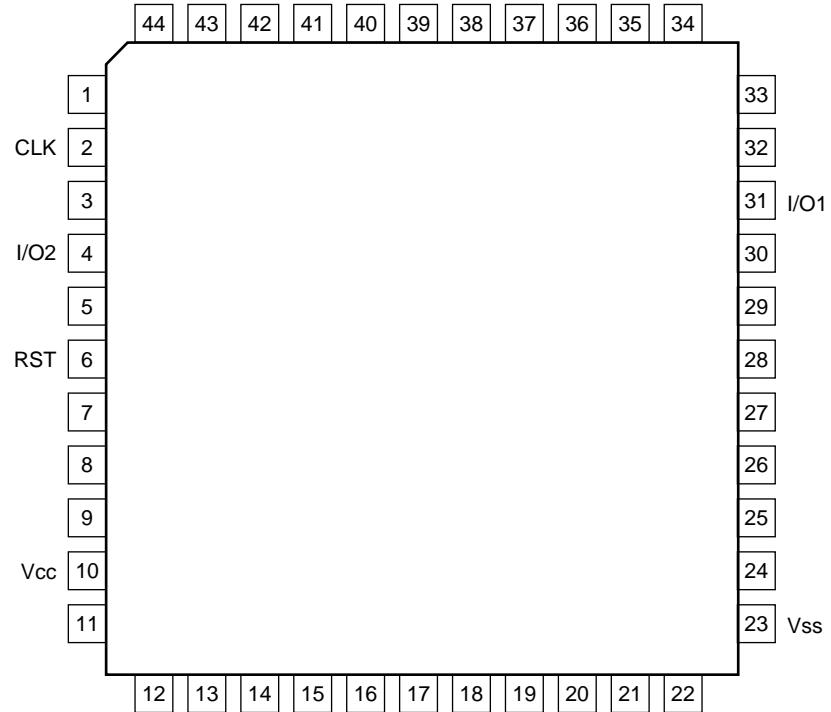


● Pin Name

No.	Name	I/O	No.	Name	I/O	No.	Name	I/O	No.	Name	I/O
1	GND	-	53	GND	-	105	GND	-	157	GND	-
2	IRQ_IO	I/O	54	DIG_KEY2	I/O	106	MEM_DATA19	I/O	158	SRAM_WEN0	I/O
3	IRQ_IN0	I	55	DIG_KEY3	I/O	107	MEM_DATA18	I/O	159	SRAM_WEN1	I/O
4	IRQ_IN1	I	56	DIG_KEY4	I/O	108	MEM_DATA17	I/O	160	SRAM_WEN2	I/O
5	AUX_IN	I/O	57	KEYDIGONE	O	109	MEM_DATA16	I/O	161	SRAM_WEN3	I/O
6	AUX_OUT	O	58	KEYDIGTEN	O	110	MEM_DATA15	I/O	162	SRAM_OEN	I/O
7	GENIO0	I/O	59	KEYDIGHUM	O	111	MEM_DATA14	I/O	163	SRAM_READ	I/O
8	GENIO1	I/O	60	KEYDIGTHOU	O	112	MEM_DATA13	I/O	164	DRAM_OEN	I/O
9	AUDIO_VOL	O	61	SEG_E	O	113	MEM_DATA12	I/O	165	DRAM_WEN	I/O
10	VDD	-	62	VDD	-	114	VDD	-	166	VDD	-
11	SERIAL_TX	O	63	SEG_F	O	115	MEM_DATA11	I/O	167	CASN0	O
12	SERIAL_RX	I	64	SEG_G	O	116	MEM_DATA10	I/O	168	CASN1	O
13	ETHER_IORD	O	65	SEG_DP	O	117	MEM_DATA9	I/O	169	CASN2	O
14	ETHER_MERD	I/O	66	GENIO2	I/O	118	MEM_DATA8	I/O	170	CASN3	O
15	SPI_ENAB1	I/O	67	IR_IN	I	119	MEM_DATA7	I/O	171	CSNRASN0	O
16	SPI_ENAB0	I/O	68	USB_OEN	O	120	MEM_DATA6	I/O	172	CSNRASN1	O
17	GND	-	69	GND	-	121	GND	-	173	GND	-
18	SPI_OUT	O	70	USB_SPEED	O	122	MEM_DATA5	I/O	174	CSNRASN2	O
19	SPI_CLK	O	71	USB_VPO	O	123	MEM_DATA4	I/O	175	CSNRASN3	O
20	SPI_IN	I	72	USB_VMP	O	124	MEM_DATA3	I/O	176	CSNRASN4	O
21	I2C_DATA	I/O	73	CLOCK48	I	125	MEM_DATA2	I/O	177	CSNRASN5	O
22	I2C_CLK	I/O	74	USB_RCV	I	126	MEM_DATA1	I/O	178	CSNRASN6	O
23	VDD	-	75	VDD	-	127	VDD	-	179	VDD	-
24	SCAN_ENAB	I	76	USB_VP	I	128	MEM_DATA0	I/O	180	CSNRASN7	O
25	TEST_ENAB	I	77	USB_VM	I	129	MEM_ADDR8	I/O	181	BUSREQN0	I
26	TDO	O	78	RESET_OUTN	O	130	MEM_ADDR9	I/O	182	BUSGRANTN0	O
27	TDI	I	79	GENIO3	I/O	131	MEM_ADDR10	I/O	183	BUSREQN1	I
28	TMS	I	80	GENIO4	I/O	132	MEM_ADDR11	I/O	184	BUSGRANTN1	I/O
29	TCK	I	81	GENIO5	I/O	133	MEM_ADDR12	I/O	185	VIDEO_ENABN	I/O
30	GND	-	82	GND	-	134	GND	-	186	GND	-
31	INPUT_CLOCK	I	83	GENIO6	I/O	135	MEM_ADDR13	I/O	187	AUDIO_ENABN	I/O
32	INPUT_ERROR	I/O	84	GENIO7	I/O	136	MEM_ADDR14	I/O	188	PES_START	I/O
33	INPUT_SYNC	I	85	GENIO8	I/O	137	MEM_ADDR15	I/O	189	PACKET_ERROR	I/O
34	INPUT_ENAB	I	86	GENIO9	I/O	138	MEM_ADDR16	I/O	190	MAC_DATA0	I/O
35	INPUT_DATA0	I	87	CLOCK27	O	139	MEM_ADDR17	I/O	191	MAC_DATA1	I/O
36	VDD	-	88	VDD	-	140	VDD	-	192	VDD	-
37	INPUT_DATA1	I	89	CLOCK54	I	141	MEM_ADDR18	I/O	193	MAC_DATA2	I/O
38	INPUT_DATA2	I	90	VCX_CTRL	O	142	MEM_ADDR19	I/O	194	MAC_DATA3	I/O
39	INPUT_DATA3	I	91	MEM_DATA31	I/O	143	MEM_ADDR20	I/O	195	MAC_DATA4	I/O
40	INPUT_DATA4	I	92	MEM_DATA30	I/O	144	MEM_ADDR21	I/O	196	MAC_DATA5	I/O
41	INPUT_DATA5	I/O	93	MEM_DATA29	I/O	145	MEM_ADDR22	I/O	197	MAC_DATA6	I/O
42	INPUT_DATA6	I/O	94	MEM_DATA28	I/O	146	MEM_ADDR23	I/O	198	MAC_DATA7	I/O
43	GND	-	95	GND	-	147	GND	-	199	GND	-
44	INPUT_DATA7	I/O	96	MEM_DATA27	I/O	148	MEM_ADDR24	I/O	200	QPSK_RX_CLK	I
45	INT_DATA	I/O	97	MEM_DATA26	I/O	149	MEM_ADDR25	I/O	201	QPSK_RX	I
46	INT_CLK	O	98	MEM_DATA25	I/O	150	MEM_ADDR26	I/O	202	QPSK_TX_ENAB	O
47	EXT_DATA	I/O	99	MEM_DATA24	I/O	151	MEM_ADDR27	I/O	203	QPSK_TX_CLK	I
48	EXT_CLK	O	100	MEM_DATA23	I/O	152	MEM_ADDR28	I/O	204	QPSK_TX	O
49	EXT_RESET	O	101	MEM_DATA22	I/O	153	MEM_ADDR29	I/O	205	COMP_IN	I
50	EXT_DETECT	I	102	MEM_DATA21	I/O	154	PER_CSN	I/O	206	DSIG_OUT	O
51	DIG_KEY1	I/O	103	MEM_DATA20	I/O	155	MEM_READY	I/O	207	RESETN	I
52	VDD	-	104	VDD	-	156	VDD	-	208	VDD	-

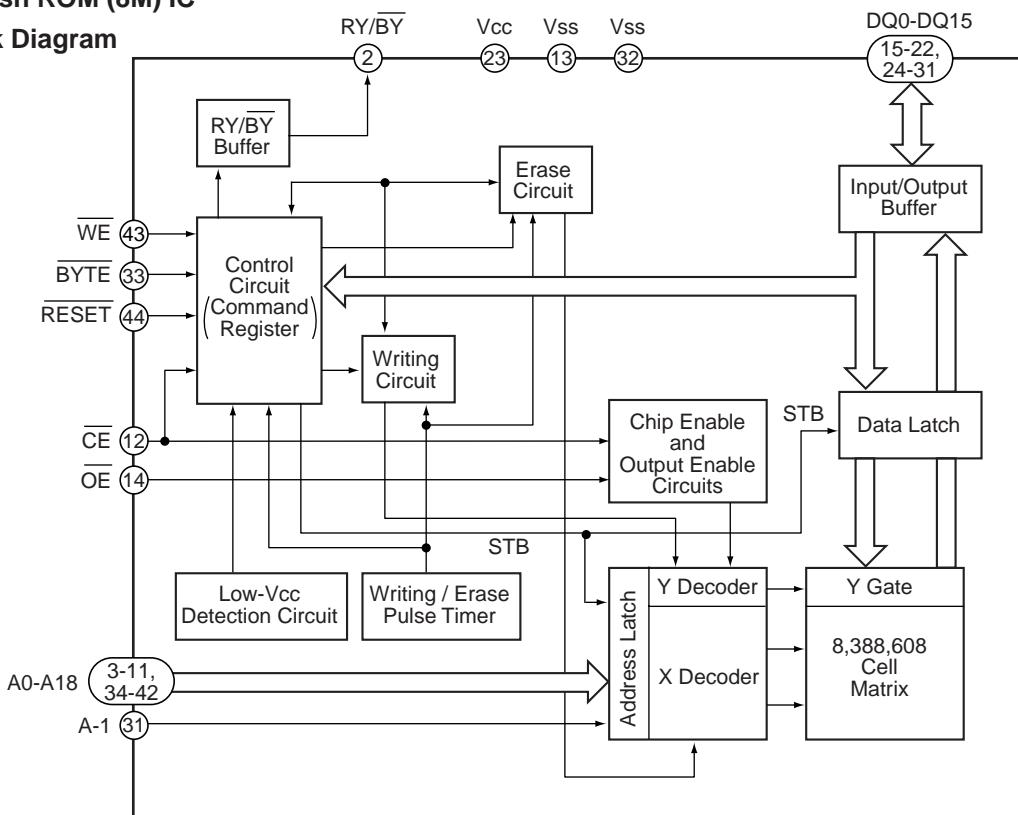
■ 570215 [MAIN ASSY (3/12) : IC1104]

- Sub-CPU (Secure Micro)
 - Pin Arrangement



■ MBM29F800BA-70PF [MAIN ASSY (4/12) : IC1305, IC1306, IC1307 and IC1308]

- Flash ROM (8M) IC
- Block Diagram



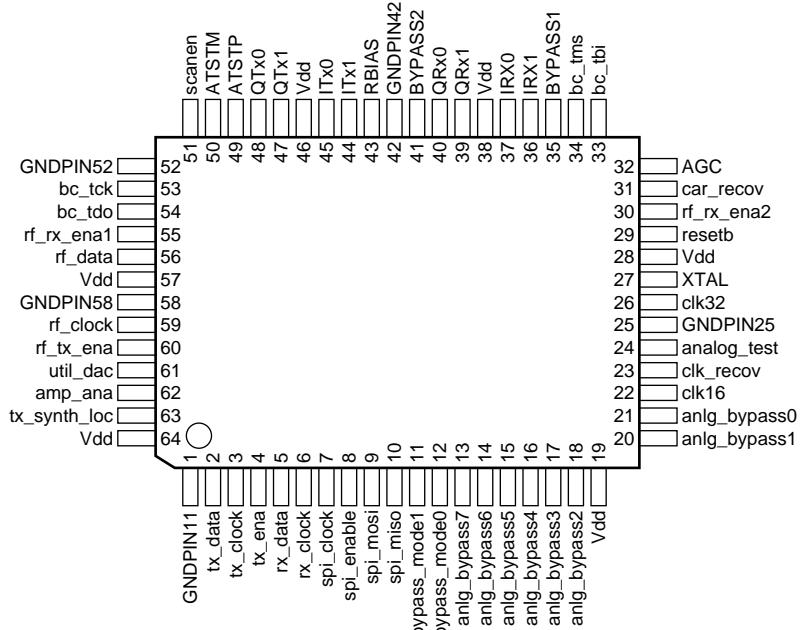
● Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	RY/BY	Ready/busy output	23	Vcc	Power supply (+5.0V ±10% or ±5%)
2	A18	Address input	24	DQ4	Data input/output
3	A17		25	DQ12	
4	A7		26	DQ5	
5	A6		27	DQ13	
6	A5		28	DQ6	
7	A4		29	DQ14	
8	A3		30	DQ7	
9	A2		31	DQ15/A-1	Data input/output, address input
10	A1		32	Vss	Ground
11	A0		33	BYTE	8 bit or 16 bit switching
12	CE	Chip enable	34	A16	Address input
13	Vss	Ground	35	A15	
14	OE	Output enable	36	A14	
15	DQ0	Data input/output	37	A13	
16	DQ8		38	A12	
17	DQ1		39	A11	
18	DQ9		40	A10	
19	DQ2		41	A9	
20	DQ10		42	A8	
21	DQ3		43	WE	Write enable
22	DQ11		44	RESET	Hard ware reset

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■ SS38122FB21 [MAIN ASSY (6/12) : IC1504]

- BGATE IC
- Pin Arrangement



● Pin Function

No.	Name	I/O	No.	Name	I/O	No.	Name	I/O	No.	Name	I/O
1	GNDPIN1	G	17	anlg_bypass3	I/O	33	bc_tdi	I	49	ATSTP	O
2	tx_data	I	18	anlg_bypass2	I/O	34	bc_tms	I	50	ATSTM	O
3	tx_clock	O	19	Vdd	P	35	BYPASS1	I	51	scanen	I
4	tx_ena	I	20	anlg_bypass1	I/O	36	IRX1	I	52	GNDPIN52	G
5	rx_data	O	21	anlg_bypass0	I/O	37	IRX0	I	53	bc_tck	I
6	rx_clock	I	22	clk16	O	38	Vdd	P	54	bc_tdo	O
7	spi_clock	I	23	clk_recov	O	39	QRx1	I	55	rf_rx_ena1	O
8	spi_enable	I	24	analog_test	I	40	QRx0	I	56	rf_data	O
9	spi_mosi	I	25	GNDPIN25	G	41	BYPASS2	I	57	Vdd	P
10	spi_miso	O	26	clk32	I	42	GNDPIN42	G	58	GNDPIN58	G
11	bypass_mode1	I/O	27	XTAL	O	43	RBIAS	I	59	rf_clock	O
12	bypass_mode0	I/O	28	Vdd	P	44	ITx1	O	60	rf_tx_ena	O
13	anlg_bypass7	I/O	29	resetb	I	45	ITx0	O	61	util_dac	O
14	anlg_bypass6	I/O	30	rf_rx_ena2	O	46	Vdd	P	62	amp_ana	O
15	anlg_bypass5	I/O	31	car_recov	O	47	QTx1	O	63	tx_synth_loc	I/O
16	anlg_bypass4	I/O	32	AGC	O	48	QTx0	O	64	Vdd	P

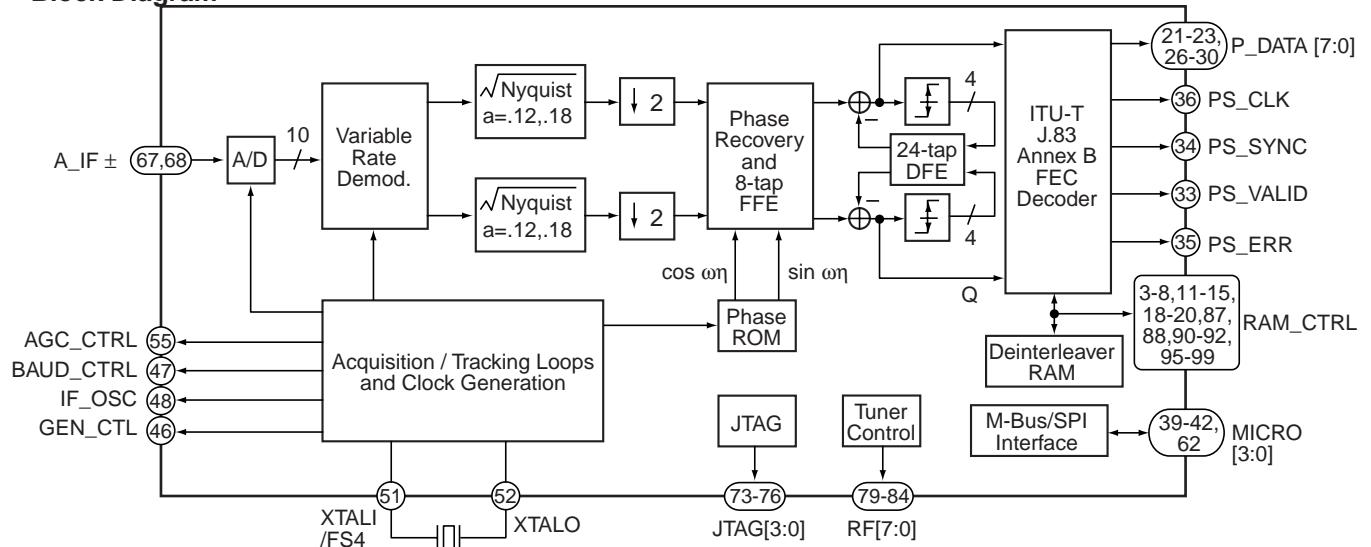
Note :

I = INPUT
 O = OUTPUT
 I/O = BIDIRECTIONAL
 P = Vdd
 G = GND
 NC = No Connection

■ BCM3116KPF [MAIN ASSY (6/12) : IC1501]

- QAM Receiver

- Block Diagram



- Pin Function (By Pin Number)

No.	I/O	Pin Name	No.	I/O	Pin Name	No.	I/O	Pin Name	No.	I/O	Pin Name
1	G	GND0	26		P_DATA[4]	51	XI	XTALI/FS4	76	Tri	TDO
2	V	VDD0	27	I/O	P_DATA[3]	52	XO	XTALO	77	G	GND9
3		R_ADDR[13]	28		P_DATA[2]	53	G	GND7	78	V	VDD9
4		R_ADDR[12]	29		P_DATA[1]	54	V	VDD7	79	O	RF_DATA[7]
5	I/O	R_ADDR[11]	30	O	P_DATA[0]/S_OUT	55	O	AGC/CTL	80	O	RF_CS[0]
6		R_ADDR[10]	31	G	GND4	56	I/O	ADCLK	81		RF_CS[1]
7		R_ADDR[9]	32	V	VDD4	57	G	GND8	82	O	RF_AGC_SEL
8		R_ADDR[8]	33		PS_VALID	58	V	VDD8	83	O	RF_BYP
9	G	GND1	34	I/O	PS_SYNC	59	OD	IRQ	84	O	RF_CLK
10	V	VDD1	35		PS_ERR	60	I	RESET	85	G	GND10
11		R_ADDR[7]	36		PS_CLK	61	I	TS	86	V	VDD10
12		R_ADDR[6]	37	G	GND5	62	I	SPI_I2C	87	Tri	R_WE
13	I/O	R_ADDR[5]	38	V	VDD5	63	G	AGND0 (PLL)	88	Tri	R_OE
14		R_ADDR[4]	39	I/O	SDA/MOSI	64	V	AVDD0 (PLL)	89	V	VIPLVL
15		R_ADDR[3]	40	I	SCL/SCK	65	V	AVDD1 (A/D)	90	I/O	R_DATA[6]
16	G	GND2	41	I/O	ADDR[1]/MISO	66	G	AGND1 (A/D)	91	I/O	R_DATA[5]
17	V	VDD2	42	I	ADDR[0]/SS	67	A	A_IF+	92		R_DATA[4]
18	I/O	R_ADDR[2]	43	O	BCLK	68	A	A_IF-	93	G	GND11
19		R_ADDR[1]	44	G	GND6	69	G	AGND2 (A/D)	94	V	VDD11
20		R_ADDR[0]	45	V	VDD6	70	V	AVDD2 (A/D)	95		R_DATA[3]
21		P_DATA[7]	46	O	GEN_CTL	71	G	AGND3 (A/D)	96	I/O	R_DATA[2]
22	I/O	P_DATA[6]	47	O	BAUD_CTL	72	V	AVDD3 (A/D)	97		R_DATA[1]
23		P_DATA[5]	48	O	IF_OSC	73	ID	TCK	98		R_DATA[0]
24	G	GND3	49	XO	XTALO2	74	IU	TMS	99	I/O	R_ADDR[14]
25	V	VDD3	50	XI	XTALI2	75	IU	TDI	100	I	TBYP

I : Input O : Output

I/O : Bidirectional OD : Open drain output

A : Analog

Tri : Tri-stateable output

IU : Input with internal pull-up

ID : Input with internal pull-down

XI : Crystal input

XO : Crystal output

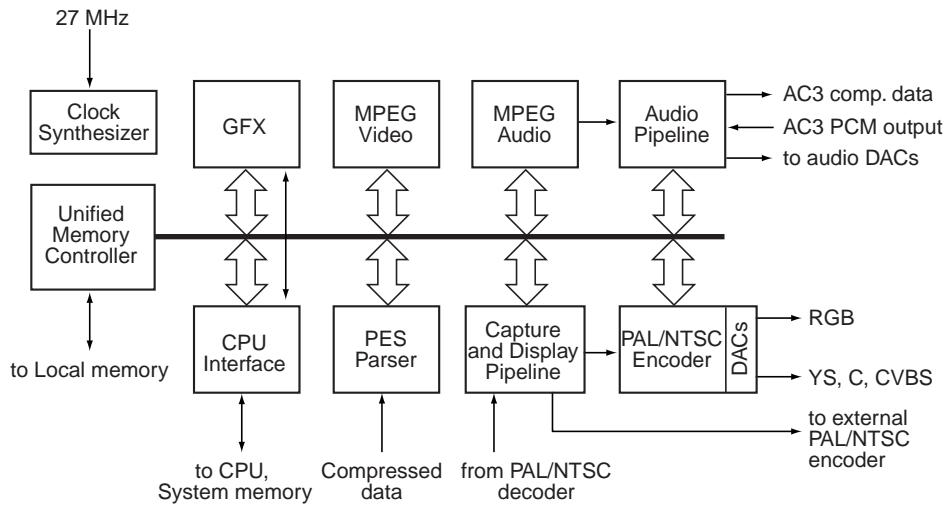
BD-V1100, BD-V1110

• Pin Function (By Function)

No.	Pin Name	I/O	Function
RECEIVER-19			
67,68	A_IF +/-	A	Receiver analog input (2Vp-p differential)
30	P_DATA[0]/S_OUT	O	Parallel data output (LSB) /Serial data output
21-23,26-28	P_DATA[7]-[1]	I/O	Parallel data output (MSBs)
33	PS_VALID	I/O	Parallel/serial data valid indicator
34	PS_SYNC	I/O	Parallel_serial MPEG-2 sync for packet
35	PS_ERR	I/O	Parallel/serial error signal
36	PS_CLK	I/O	Parallel/serial data packet clock output
56	ADCLK	I/O	Off-chip A/D sample clock/On-chip A/D sample clock
43	BCLK	O	Baud clock
55	AGCI_CLT	O	IF AGC $\Delta\Sigma$ output
47	BAUD_CTL	O	Baud $\Delta\Sigma$ output
46	GEN_CTL	O	General purpose $\Delta\Sigma$ output
MICROCONTROLLER INTERFACE-5			
62	SPI_I2C	I	Microcontroller mode select (M-bus/SPI)
39	SDA/MOSI	I/O	M-bus bidirectional data signal/SPI master out/slave in
40	SCL/SCK	I	M-bus clock/SPI clock
41	ADDR[1]/MISO	I/O	M-bus chip address select/SPI master in/slave out
42	ADDR[0]/SS	I	M-bus chip address select/SPI chip select
RAM CONTROL-25			
87	R_WE	Tri	RAM write enable
88	R_OE	Tri	RAM output enable
90-92,95-98	R_DATA[6]-[0]	I/O	RAM data
99,3-8, 11-15,18-20	R_ADDR[14]-[0]	I/O	RAM address
RF TUNER CONTROL-6			
84	RF_CLK	O	RF tuner serial clock
79	RF_DATA		RF tuner serial data
81,80	RF_CS[1]-[0]		RF tuner PLL enable
82	RF_AGC_SEL		RF tuner QAM/NTSC AGC select
83	RF_BYP		RF tuner bypass control
JTAG SIGNALS-4			
76	TDO	Tri	JTAG test data output
75	TDI	IU	JTAG test data input
74	TMS	IU	JTAG test mode select
73	TCK	ID	JTAG test clock
MISCELLANEOUS SIGNALS-4			
60	RESET	IU	Master reset
59	IRQ	OD	Interrupt output pin
61	TS	I	Test mode select pin
100	TBYP	I	PLL Fs4 clock bypass
VCO I/O PINS-5			
51	XTALI/FS4	XI	Crystal input pin/off chip 4 times sample clock
52	XTALO	XO	Crystal output pin
50	XTALI2	XI	Optional IF crystal input pin
49	XTALO2	XO	Optional IF crystal output pin
48	IF_OSC	O	In-band carrier oscillator output
SUPPLY VOLTAGES-32			
94,86,78,58, 54,45,38,32, 25,17,10,2	VDD[11]-[0]	V	3.3V digital power supply
93,85,77,57, 53,44,37,31, 24,16,9,1	GND[11]-[0]	G	Digital ground
63	AGND[0]	G	PLL analog ground
64	AVDD[0]	V	3.3V PLL analog power supply
72,65,70	AVDD[3]-[1]	V	3.3V A/D converter analog power supply
71,66,69	AGND[3]-[1]	G	A/D converter analog ground
89	VIPLVL	V	Input protection voltage level. (Must be tied to a low impedance 5V supply for 5V tolerant inputs)

■ STI5600ACV [MAIN ASSY (7/12) : IC1603]

- MAC IC
- Block Diagram



● Pin Function (By Pin Number)

No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name
1	VSI/PSYNC	31	D11	61	R/W	91	A9	121	DD3	151	AA4	181	VREFRGB
2	ACDSTR	32	GND	62	GND	92	A8	122	DD11	152	AA3	182	IREFRGB
3	VCDSTR	33	D10	63	WBE3	93	DD31	123	DD4	153	AA2	183	DVDD
4	CDREQ	34	D9	64	WBE2	94	DD30	124	DD10	154	GND	184	VDDcore
5	BUSREQ	35	D8	65	WBE1	95	DD29	125	DD5	155	AA1	185	CFC
6	BUSACK	36	D7	66	WBE0	96	GND	126	VDD	156	AA0	186	PIXCLK2X
7	D31	37	D6	67	A29	97	DD28	127	DD9	157	PGND	187	VDD
8	D30	38	D5	68	A28	98	DD27	128	DD6	158	PVDD	188	YCO0
9	D29	39	D4	69	VDD	99	DD26	129	DD8	159	SYSCLK	189	YCO1
10	VDD	40	VDD	70	A27	100	DD25	130	DD7	160	USRCLK	190	YCO2
11	D28	41	D3	71	A26	101	DD24	131	GNDcore	161	RESET	191	YCO3
12	D27	42	V2	72	A25	102	VDD	132	LDQM/CAS2	162	AC3REQ	192	YCO4
13	D26	43	D1	73	A24	103	DD23	133	UDQM/CAS3	163	SDAT3	193	YCO5
14	D25	44	D0	74	A23	104	DD22	134	GND	164	AUDCLK2	194	YCO6
15	D24	45	MIRQ	75	A22	105	DD21	135	CLK	165	SCLK2	195	YCO7
16	D23	46	GIRQ	76	A21	106	DD20	136	VDD	166	LRCLK1	196	HSO
17	GND	47	READY	77	A20	107	DD19	137	WE	167	SDAT2	197	VSO
18	D22	48	GND	78	GND	108	GND	138	CAS/CAS0	168	AUDCLK1	198	GND
19	D21	49	CS	79	VDDcore	109	DD18	139	RAS/RAS0	169	SCLK1	199	YCI7/CD7
20	D20	50	SRAS3	80	A19	110	DD17	140	CAS1/RAS1	170	LRCLK1	200	YCI6/CD6
21	D19	51	SRAS2	81	A18	111	DD16	141	CS0/CAS1	171	SDAT1	201	YCI5/CD5
22	D18	52	SRAS1	82	A17	112	DD15	142	GND	172	DGND	202	YCI4/CD4
23	D23	53	SRAS0	83	A16	113	DD0	143	AA11	173	CVBS	203	YCI3/CD3
24	VDD	54	SCAS3	84	A15	114	VDD	144	AA10	174	C	204	YCI2/CD2
25	D16	55	VDD	85	A14	115	DD14	145	AA9	175	Y	205	YCI1/CD1
26	GNDcore	56	SCAS2	86	A13	116	DD1	146	AA8	176	VREF	206	YCI0/CD0
27	D15	57	SCAS1	87	A12	117	DD13	147	AA7	177	IREF	207	LLCLK2X
28	D14	58	SCAS0	88	A11	118	DD2	148	VDD	178	B	208	HSI/PERR
29	D13	59	DRAMWE	89	A10	119	DD12	149	AA6	179	G		
30	D12	60	DRAMOE	90	VDD	120	GND	150	AA5	180	R		

BD-V1100, BD-V1110

● Pin Function (By Function)

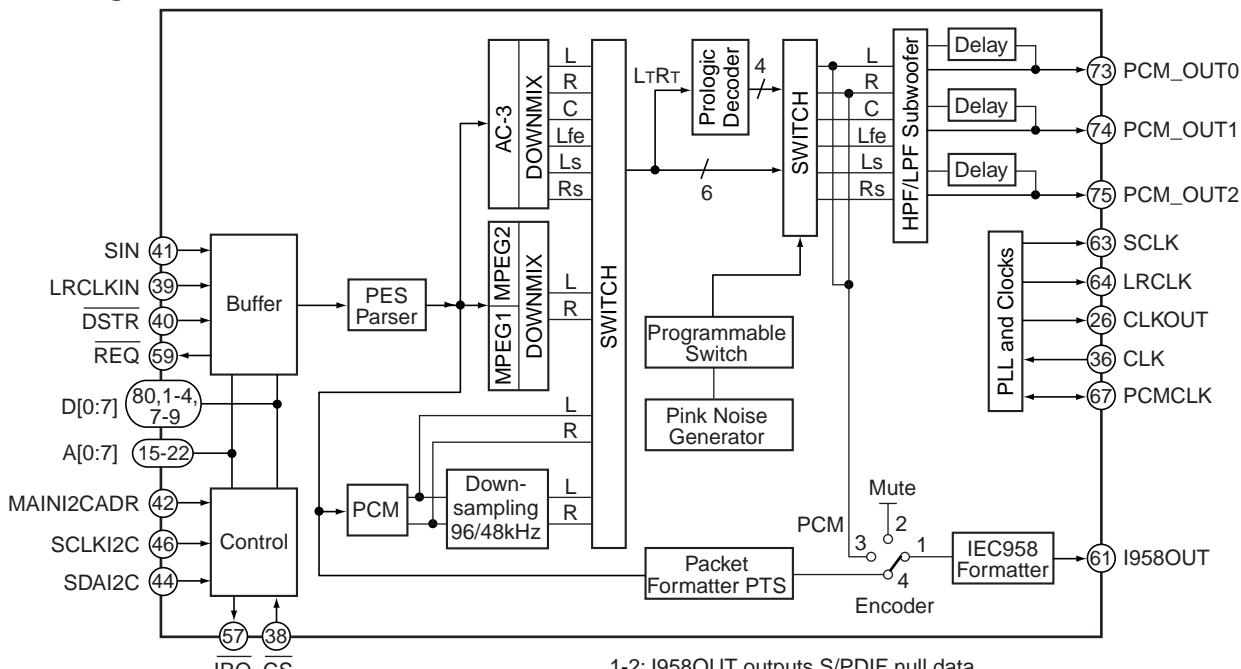
No.	Pin Name	I/O	Function		
Power/Ground and System Services (35)					
10,24,40,55, 69,79,90,102, 114,126,136, 148,184,187	VDD	S	Power supply		
17,26,32,48, 62,78,96,108, 120,131,134, 142,154,198	GND	S	Ground		
158	PVDD	S	PLL power supply		
157	PGND	S	PLL ground		
183	DVDD	S	Video DAC power supply		
172	DGND	S	Video DAC ground		
161	RESET	I	Hard reset		
159	SYCLK	I	CPU clock		
160	USRCLK	I/O	User clock (e.g. AC3 decoder clock)		
Digitized Video/Compressed Data Interface (14)					
			Compressed Data	Digitized Video	
199-206	CD[7]-[0]	I	Compressed data bus	YCl[7]-[0]	I
207	—	—	n/a	LLCLK2X	I
208	PERR	I	Packet error flag	HSI	I
1	PSYNC	I	PES start code flag	VSI	I
2	ACDSTR	I	Audio compressed data strobe	—	— n/a
3	VCDSTR	I	Video compressed data strobe	—	— n/a
4	CDREQ	O	Compressed data request	—	— n/a
CPU Interface (75)					
44-41,39-33, 31-27,25, 23-18,16-11, 9-7	D[0]-[31]	I/O	System data bus		
92,91,89-80, 77-70,68,67	A[8]-[29]	I/O	System address bus		
49	CS	I	Chip select		
61	R/W	I	Read/write indicator		
47	READY	O	Ready indicator		
45	MIRQ	OD	MPEG interrupt request		
46	GIRQ	OD	GFX interrupt request		
66-63	WBE[0]-[3]	I	Write byte enable		
58-56,54	SCAS[0]-[3]	O	System DRAM column address select		
53-50	SRAS[0]-[3]	O	System DRAM row address select		
5	BUSREQ	O	System bus request		
6	BUSACK	I	System bus acknowledge		
60	DRAMOE	O	System DRAM output enable		
59	DRAMWE	O	System DRAM write enable		
Local Memory Interface (52)					
			Extended Data Out DRAM	Synchronous DRAM	
143-147, 149-153, 155,156	AA[11]-[0]	O	Local DRAM address bus	AA[11]-[0]	O
112,115,117, 119,122,124, 127,129,130, 128,125,123, 121,118,116, 113	DD[15]-[0]	I/O	Local DRAM data bus	DD[15]-[0]	I/O
93-95,97-101, 103-107, 109-111	DD[31]-[16]	I/O	Local DRAM data bus	—	— n/a
133	CAS3	O	Column address strobe for byte 3	UDQM	O
					Upper byte data mask

No.	Pin Name	I/O	Function				
			Extended Data Out DRAM				Synchronous DRAM
132	CAS2	O	Column address strobe for byte 2	LDQM	O	Lower byte data mask	
141	CAS1	O	Column address strobe for byte 1	CS0	O	Chip select for first bank	
138	CAS0	O	Column address strobe for byte 0	CAS	O	Column address strobe	
140	RAS1	O	Row address strobe for second bank	CS1	O	Chip select for second bank	
139	RAS0	O	Row address strobe for first bank	RAS	O	Row address strobe	
137	WE	O	write enable	WE	O	Write enable	
135	—	—	n/a	CLK	O	Local SDRAM clock	
Video Output Interface (22)							
180-178	R,G,B	O	Analog RGB video				
175,174	Y,C	O	Analog S video				
173	CVBS	O	Analog composite video				
182	IREFRGB	I	Reference current for RGB DAC				
181	VREFRGB	I	Reference voltage for RGB DAC				
177	IREF	I	Reference current for Y, C, CVBS DAC				
176	VREF	I	Reference voltage for Y, C, CVBS DAC				
186	PIXCLK2X	I/O	2x pixel clock				
195-188	YCO[7]-[0]	I/O	Digital multiplexed video output				
196	HSO	O	Horizontal sync for external DENC				
197	VSO	O	Vertical sync for external DENC				
185	CFC	I	Chroma frequency control				
Audio/AC3 compressed data Interface (10)							
			no external AC3 decoder			external AC3 decoder	
168	AUDCLK1	I/O	PCM oversampling clock	AUDCLK1	I/O	PCM oversampling clock	
169	SCLK1	I/O	PCM bit clock	SCLK1	I/O	PCM bit clock	
170	LRCK1	I/O	PCM left/right clock	LRCK1	I/O	PCM left/right clock	
171	SDAT1	O	PCM serial data to first DAC	SDAT1	O	PCM serial data to first DAC	
164	AUDCLK2	I/O	PCM oversampling clock	AUDCLK2	I/O	PCM oversampling clock	
165	SCLK2	O	PCM bit clock	SCLK2	O	PCM bit clock	
166	LRCK2	O	PCM left/right clock	LRCK2	O	AC3 compressed data bit clock	
167	SDAT2	O	PCM serial data to second DAC	SDAT2	O	Word select	
163	—	—	n/a	SDAT3	I	AC3 serial compressed data to AC3 decoder	
162	—	—	n/a	AC3REQ	I	Compressed data request from AC3 decoder	

■ STI4600ACV [MAIN ASSY (8/12) : IC1701]

- AC-3 Decoder IC

- Block Diagram



1-2: I958OUT outputs S/PDIF null data
 1-3: I958OUT outputs S/PDIFPCM (non-compressed data)
 1-4: I958OUT outputs S/PDIF AC-3 or MPEG2 (compressed data)

• Pin Function

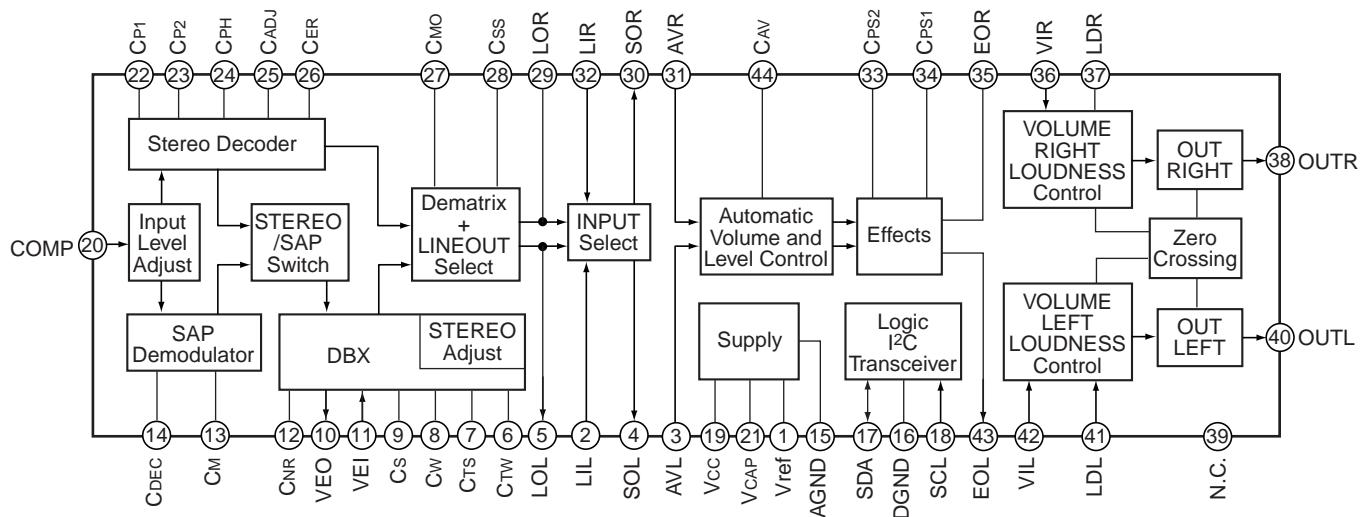
No.	Pin Name	I/O	Function
CONTROL INTERFACES			
57	IRQ	O(1)	Interrupt signal (level), active low
45	SELI2C	I(2)	Selects the control interface (when high : serial interface, when low : parallel interface)
I²C CONTROL INTERFACE			
44	SDAI2C	I/O(1)	I ² C serial data
46	SCLKI2C	I	I ² C clock
42	MAINI2CADR	I(2)	Determines the slave address
PARALLEL CONTROL INTERFACE			
80,1-4,7-9	D0-D7	I/O	Host data
15-22	A0-A7	I	Host address
38	CS	I	Chip select, active low
23	R/W	I	Read/write selection : read access when high, write access when low
37	WAIT	O(3)	Data acknowledge, active low
DATA INPUT INTERFACE			
SERIAL DATA INTERFACE			
40	DSTR	I	Clock input data, active low
41	SIN	I	Serial input data
39	LRCKIN	I	Word clock for the input
59	REQ	O	Handshake for the data transfer, active low
DATA OUTPUT INTERFACE			
67	PCMCLK	I/O	PCM clock input or PLL DAC output

No.	Pin Name	I/O	Function
DAC INTERFACE			
63	SCLK	O	Bit clock for the DAC
64	LRCLK		Word clock for the DAC
73	PCM_OUT0		Data for the first DAC (left/right)
74	PCM_OUT1		Data for the second DAC (centre/sub)
75	PCM_OUT2		Data for the third DAC (leftsur/rightsur)
IEC958 INTERFACE (S/PDIF)			
61	I958OUT	O	S/PDIF signal
STATUS INFORMATION			
PCM RELATED INFORMATION			
58	SFREQ	O	When high, indicates that the sampling frequency is either 44.1kHz or 22.05kHz (*). When low, indicates that the sampling frequency is either 32kHz, 48kHz, 96kHz, 24kHz (*) or 16kHz (*). (*) : Frequencies available for chips in software versions 4 or later only.)
60	DEEMPH	O	Indicates if de-emphasis is performed
AUDIO VIDEO SYNCHRONIZATION			
62	PTS	O	Indicates that a PTS has been detected, active low.
OTHER SIGNALS			
36	CLK	I	Master clock input signal (27MHz)
43	RESET	I(2)	Reset signal input, active low
49	TEST	I(2)	Reserved pin : to be connected to VDD
52	SMODE	I	Reserved pin : to be connected to GND
PIN INTERFACES			
26	CLKOUT	O	System clock output
68	VDADAC	VDD	Analog DAC PLL supply voltage
69	VCDAC	I	DAC PLL filter
70	VSADAC	GND	Analog DAC PLL ground
31	VDASYS	VDD	Analog system supply
32	VCSYS	I	System PLL filter
33	VSASYS	GND	Analog system ground
5,11,12,24, 27,30,35, 47,50,53, 55,65,71, 76,79	GND	GND	Ground
6,10,13,25, 28,29,34, 48,51,54, 56,66,72, 77,78			
14	NC	NC	Reserved pin : to be connected GND

■ TDA9852H [MAIN ASSY (9/12) : IC1801]

- BTSC Decoder IC

- Block Diagram

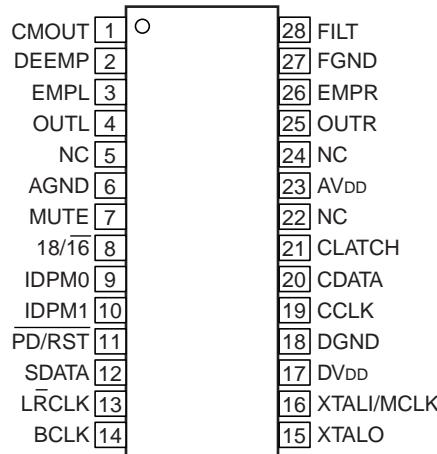


● Pin Function

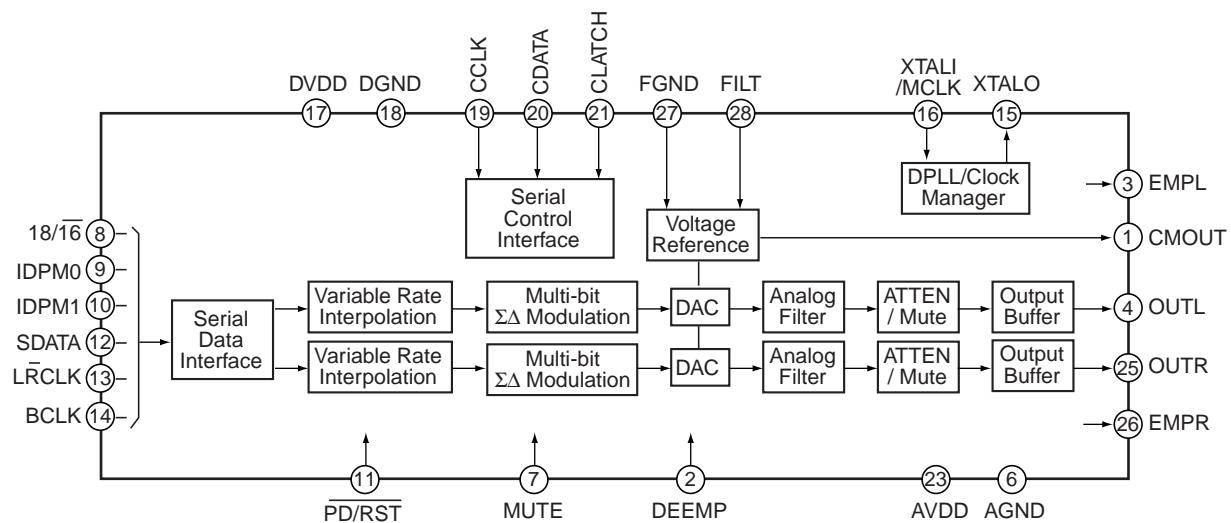
No.	Pin Name	Function	No.	Pin Name	Function
1	Vref	Reference voltage 0.5Vcc	23	CP2	Capacitor for pilot detector
2	LIL	Input line control, left channel	24	CPH	Capacitor for phase detector
3	AVL	Input automatic volume control, left channel	25	CADJ	Capacitor for filter adjustment
4	SOL	Output selector, left channel	26	CER	Ceramic resonator
5	LOL	Output line control, left channel	27	CMO	Capacitor DC-decoupling mono
6	CTW	Capacitor timing wideband for dbx	28	CSS	Capacitor DC-decoupling stereo/SAP
7	CTS	Capacitor timing spectral for dbx	29	LOR	Output line control, right channel
8	CW	Capacitor wideband for dbx	30	SOR	Output selector, right channel
9	CS	Capacitor spectral for dbx	31	AVR	Input automatic volume control, right channel
10	VEO	Variable emphasis output for dbx	32	LIR	Input line control, right channel
11	VEI	Variable emphasis input for dbx	33	CPS2	Capacitor 2 pseudo function
12	CNR	Capacitor noise reduction for dbx	34	CPS1	Capacitor 1 pseudo function
13	CM	Capacitor mute for SAP	35	EOR	Output effects, right channel
14	CDEC	Capacitor DC-decoupling for SAP	36	VIR	Input volume, right channel
15	AGND	Analog ground	37	LDR	Input loudness, right channel
16	DGND	Digital ground	38	OUTR	Output, right channel
17	SDA	Serial data input/output (I ² C-bus)	39	n.c.	Not connected
18	SCL	Serial clock input (I ² C-bus)	40	OUTL	Output, left channel
19	Vcc	Supply voltage	41	LDL	Input loudness, left channel
20	COMP	Composite input signal	42	VIL	Input volume, left channel
21	VCAP	Capacitor for electronic filtering of supply	43	EOL	Output effects, left channel
22	CP1	Capacitor for pilot detector	44	CAV	Automatic volume control capacitor

■ AD1859JRS [MAIN ASSY (9/12) : IC1802]

- Audio DAC IC
- Pin Arrangement

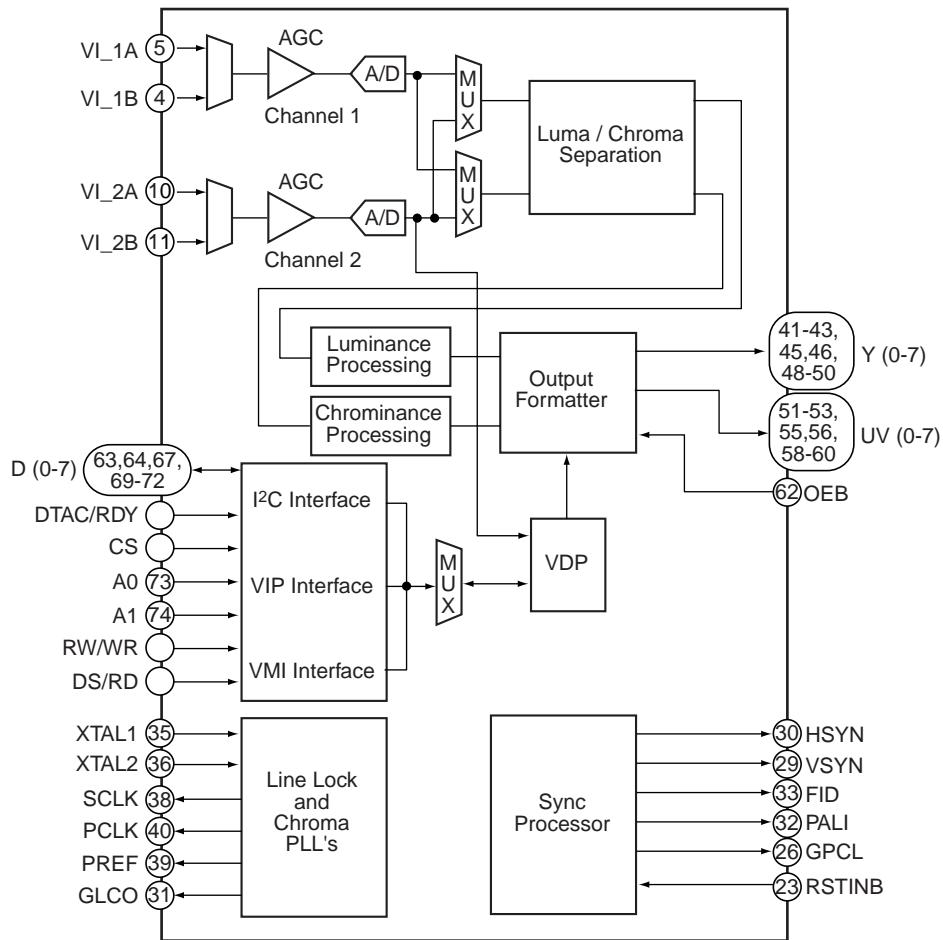


- Block Diagram



■ TVP5020CPFP [MAIN ASSY (10/12) : IC2202]

- Video Decoder IC
- Block Diagram



● Pin Function

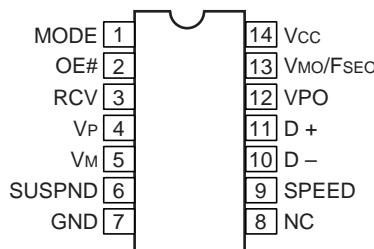
No.	Pin Name	I/O	Function
Analog Video			
5 4 10 11	VI_1A VI_1B VI_2A VI_2B	I	Analog video inputs. Up to four composite inputs or two s-video inputs or a combination of the two. The inputs must be AC coupled. The recommended coupling capacitor is 0.1μF.
Clock Signals			
40	PCLK	O	Pixel clock output. The frequency is 12.2727MHz for square-pixel NTSC, 14.75MHz for square-pixel PAL and 13.5MHz for ITU-R BT.601 sampling modes.
39	PREF	O	Clock phase reference signal. This signal qualifies clock edges when SCLK is used to clock data that is changing at the pixel clock rate.
38	SCLK	O	System clock output with twice the frequency of the pixel clock (PCLK).
35 36	XTAL1 XTAL2	I	External clock reference, The user may connect XTAL1 to a TTL-compatible oscillator or to one terminal of a crystal oscillator. The user may connect XTAL2 to the other terminal of the crystal oscillator or not connect XTAL2 at all. Square pixel sampling uses an oscillator frequency of 26.800MHz. ITU-RBT.601 sampling uses an oscillator frequency of 24.576MHz.
Digital Video			
61	EXT_DATA_8	I	Data port-bit [8]
51,52,53, 55,56,58, 59,60	UV[0]-[7]	I/O	8-bit digital chrominance outputs. These terminals may be placed in a high-impedance state under host port control. These terminals may also be configured to output data from the channel 2 A/D converter. The function of these terminals is controlled via the host port-bus. A vendor modifiable subsystem ID may be configured by configuring the UV[7]-[0] terminals with pull-up/pull-down resistors.
41,42,43, 45,46,48, 49,50	Y[0]-[7]	O	8-bit digital luminance outputs or 8-bit multiplexed luminance and chrominance outputs. These terminals may be placed in a high-impedance state under host port control. These terminals may also be configured to output data from the channel 1 A/D converter.
HOST PORT-bus		VMI	I2C
73	A0	I	VMI address port
74	A1	I	VMI address port
72-69,67, 66,64,63	D[0]-[7]	I/O	VMI data port-bit[7]-[0]
80	INTREQ	O(OD)	Interrupt request (INTREQ)
79	VC0	I/O (OD)	VMI port data ack or ready signal (DTACK)
76	VC3	I	VMI port chip select. (VC)
77	VC2	I/O (OD)	VMI port data strobe or read signal (DS/RD)
78	VC1	I/O	VMI port read-write or write (RW/WR)
Miscellaneous Signals			
26	GPCL	I/O	General purpose control logic. This terminal has three functions : 1. General purpose output. In this mode state of GPCL is directly programmed via host port. 2. Vertical blank output. In this mode the GPCL terminal is used to indicate the vertical blanking interval of the output video. The beginning and end times of this signal are programmable via host port control. 3. Sync lock control input. In this mode when GPCL is high the output clocks and horizontal line count are forced to nominal values.
31	GLCO	I/O	This serial output carries the internal horizontal PLL the color subcarrier PLL phase information and NTSC/PAL field sequence information. A slave device can decode the information to allow genlocking to the TVP5010. Data is transmitted at the SCLK rate. Additionally, this terminal in conjunction with PALI and FID is used to determine the host port mode configuration during initial power up.
62	OEB	I	Output enable, active low : or data input for 9 or 10-bit external A/D. When this terminal is an output enable a logic 1 input forces Y and UV output terminals to high impedance states.
28	PLL_BYP	-	Connected to ground side of capacitor between this terminal and PLL_AVDD.
23	RSTINB	I	Reset input, active low. A low input initiates the reset sequence
1,2,13-15	No Connect	-	Not connected

BD-V1100, BD-V1110

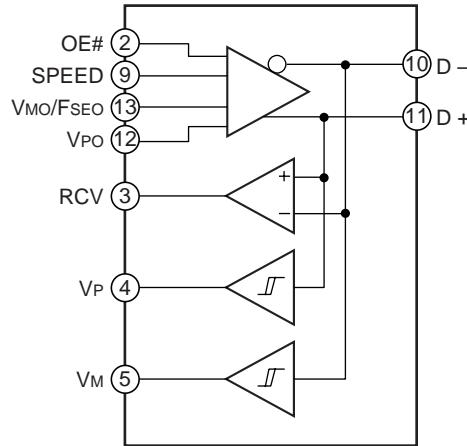
No.	Pin Name	I/O	Function
Power Supplies			
16	AFE_GND	–	Analog supply. Connect to analog ground
18	AFE_VDD	–	Analog supply. Connect to 5V analog.
3 12	CH1_AGND CH2_AGND	–	Analog grounds. Connect to analog ground
6 9	CH1_AVDD CH2_AVDD	–	Analog supply. Connect to 5V analog.
21,22,24, 37,47,57, 68	DGND	–	Digital grounds
20	DTO_AGND	–	Ground for DTO. Connect to analog ground.
19	DTO_AVDD	–	Supply for DTO. Connect to 5V analog.
34,44,54, 65,75	DVDD	–	Digital supply 3.3V
17	NSUB	–	Substrate ground. Connect to analog ground.
25	PLL_AVDD	–	PLL supply connect to 3.3V
8	REFP	–	A/D reference supply. Connect to 5V analog.
7	REFM	–	A/D reference ground. Connect to analog ground.
Sync Signals			
27	AVID	O	Active video indicator. This signal is high during the horizontal active time of the video output on the Y and UV terminals. AVID continues to toggle during vertical blanking intervals. This terminal may be placed in a high-impedance state.
33	FID	I/O	Odd/even field indicator or vertical lock indicator. For odd/even indicator a logic 1 indicates the odd field. For vertical lock indicator a logic 1 indicates the internal vertical processor is in locked state. Additionally, this terminal in conjunction with GLCO and PALI is used to determine the host port mode configuration during initial power up.
30	HSYN	O	Horizontal sync signal. The rising edge time is programmable via host port control this terminal may be placed in a high-impedance state under host port control.
32	PALI	I/O	PAL line indicator or horizontal lock indicator. For PAL line indicator a logic 1 indicates a noninverted line and a logic 0 indicates an inverted line. For horizontal lock indicator a logic 1 indicates the internal horizontal PLL is in a locked state. Additionally, this terminal in conjunction with GLCO and FID is used to determine the host port mode configuration during initial power up.
29	VSYN	O	Vertical sync or vertical blanking signal. The function of this terminal is selected via host port control. This terminal may be placed in a high-impedance state.

■ PDIUSBP11APW [MAIN ASSY (12/12) : IC1201]

- USB Driver IC
- Pin Arrangement



• Block Diagram



• Pin Function

No.	Pin Name	I/O	Function																																				
1	MODE	I	Mode. When left unconnected a weak pull-up transistor pulls it to VCC and in this mode, the PDIUSBP11APW is backward compatible to PDIUSBP11APW. When connected to ground the VMO/FSEO pin takes the function of FSEO (force SEO)																																				
2	OE#	I	Output enable. Active low, enables the transceiver to transmit data on the bus. When not active the transceiver is in receive mode.																																				
3	RCV	O	Receive data. CMOS level output for USB differential input.																																				
4	VP	O	Gated version of D- and D+. Outputs are logic "0" and logic "1". Used to detect single ended zero (SE0#), error conditions and interconnect speed. (Inputs to SIE)																																				
5	VM	O	<table border="1"> <thead> <tr> <th>VP</th> <th>VM</th> <th>RESULT</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>SE0#</td></tr> <tr><td>0</td><td>1</td><td>Low Speed</td></tr> <tr><td>1</td><td>0</td><td>Full Speed</td></tr> <tr><td>1</td><td>1</td><td>Error</td></tr> </tbody> </table>	VP	VM	RESULT	0	0	SE0#	0	1	Low Speed	1	0	Full Speed	1	1	Error																					
VP	VM	RESULT																																					
0	0	SE0#																																					
0	1	Low Speed																																					
1	0	Full Speed																																					
1	1	Error																																					
6	SUSPND	I	Suspend. Enables a low power state while the USB bus is inactive. While the SUSPND pin is active it will drive the RCV pin to a logic "0" state. Both D+ and D- are tri-stated.																																				
7	GND	-	Ground reference																																				
8	NC	-	Not used																																				
9	SPEED	I	Edge rate control. Logic "1" operates at edge rates for "full speed". Logic "0" operates edge rates for "low speed".																																				
10	D+	AI/O	Data+. Differential data bus conforming to the Universal Serial Bus standard.																																				
11	D-	AI/O	Data-. Differential data bus conforming to the Universal Serial Bus standard.																																				
12	VPO	I	Inputs to differential drive. (Outputs from SIE).																																				
13	VMO/FSEO	I	<table border="1"> <thead> <tr> <th>MODE</th> <th>VPO</th> <th>VMO/FSEO</th> <th>RESULT</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>0</td><td>Logic "0"</td></tr> <tr><td>0</td><td>0</td><td>1</td><td>SE0#</td></tr> <tr><td>1</td><td>0</td><td>0</td><td>Logic "1"</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>SEO#</td></tr> <tr><td>1</td><td>1</td><td>0</td><td>SE0#</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>Logic "0"</td></tr> <tr><td>1</td><td>1</td><td>0</td><td>Logic "1"</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>Illegal code</td></tr> </tbody> </table>	MODE	VPO	VMO/FSEO	RESULT	0	0	0	Logic "0"	0	0	1	SE0#	1	0	0	Logic "1"	1	0	1	SEO#	1	1	0	SE0#	1	1	1	Logic "0"	1	1	0	Logic "1"	1	1	1	Illegal code
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1	1	1	Logic "0"																																				
1	1	0	Logic "1"																																				
1	1	1	Illegal code																																				
14	Vcc	-	3.0V to 3.6V power supply																																				

7.3 DISTINCTION BETWEEN /KU, /KUXJ, /KUXJ/1 AND /KU/1 MODELS OF BD-V1100

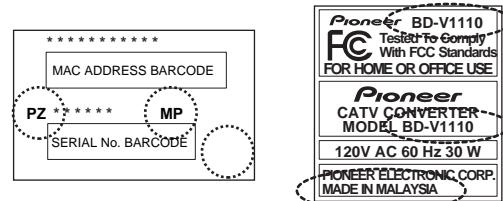
The exterior distinction between /KU, /KUXJ, /KUXJ/1 and /KU/1 models of BD-V1100 are the following table and figure.

Models	Name Plate Marking	Barcode Label Marking
BD-V1100 /KU	" MADE IN JAPAN "	Serial No. left side " PI ", right side " SS "
BD-V1100 /KUXJ	" MADE IN MALAYSIA "	Serial No. left side " PM ", right side " MP "
BD-V1100 /KUXJ/1	" MADE IN MALAYSIA "	Serial No. left side " PM ", right side " MP ", right down side " /1 "
BD-V1100 /KU/1	" MADE IN JAPAN "	Serial No. left side " PI ", right side " SS ", right down side " /1 "

Models	Service Manual Order No.
BD-V1100 /KU	ARP3062
BD-V1100 /KUXJ	ARP3070
BD-V1100 /KUXJ/1	This manual
BD-V1100 /KU/1	This manual

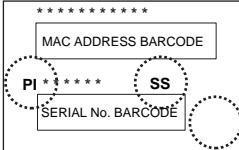
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BD-V1110/KUXJ

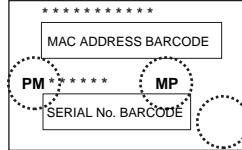


BARCODE LABEL

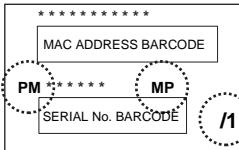
BD-V1100/KU



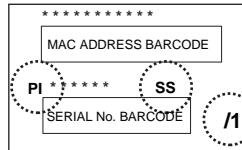
BD-V1100/KUXJ



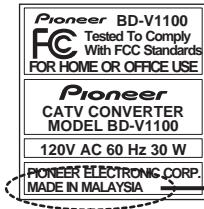
BD-V1100/KUXJ/1



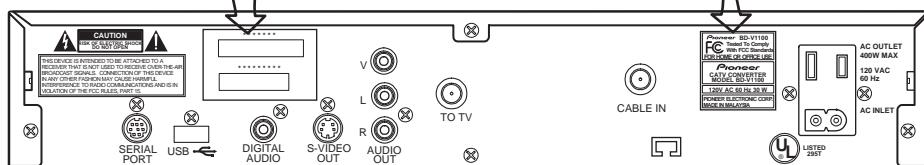
BD-V1100/KU/1



NAME PLATE



- MADE IN JAPAN : BD-V1100/KU
- MADE IN MALAYSIA : BD-V1100/KUXJ
- MADE IN MALAYSIA : BD-V1100/KUXJ/1
- MADE IN JAPAN : BD-V1100/KU/1

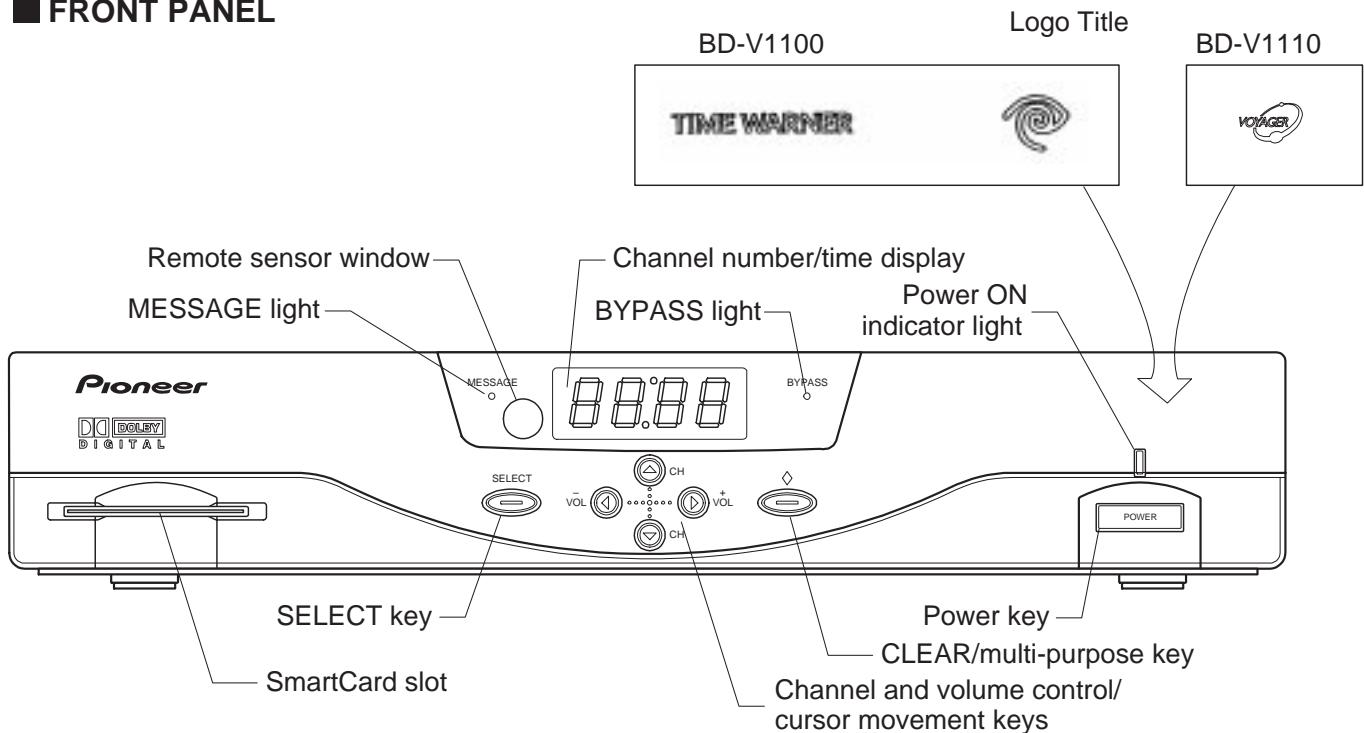


[Rear Panel side]

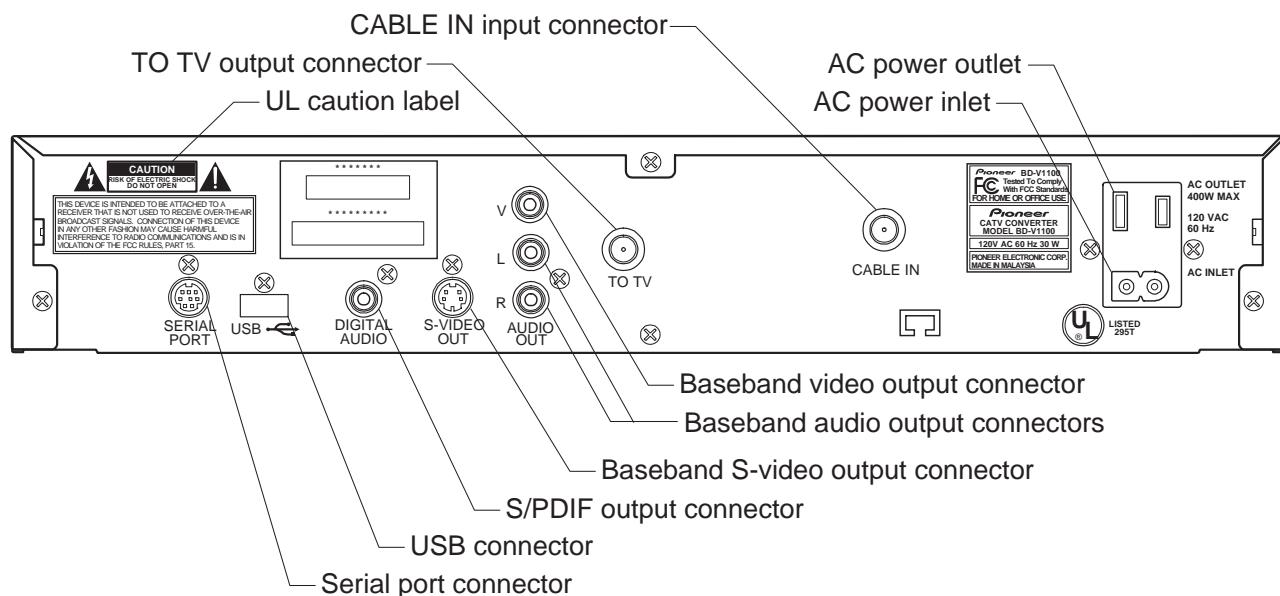
8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ FRONT PANEL



■ REAR PANEL



8.2 SPECIFICATIONS

RF

Receive Frequency	54 to 856MHz
Output Channel	3/4 CH
Output Level at 'TO TV'	11dBmV +2/-3dB
Frequency Stability at 'TO TV'	+/-150KHz max.
Output Return Loss at 'TO TV'	12dB min.
Input Return Loss at 'CABLE IN'	6dB min.
Spurious Signal at 'CABLE IN'	-30dBmV max..(50~856MHz)
Spurious Signal at 'TO TV'	-15dBmV max..(50~220MHz)
Local Oscillator Level at 'CABLE IN'	-10dBmV max.
Talk Back	-34 dB max.
Modulation Technic (Digital Input)	ITU-T J.83 Annex B 64QAM and 256 QAM
64QAM Input Level (Digital Input)	-15 to +14 dBmV
256QAM Input Level (Digital Input)	-9 to +14 dBmV

Analog BaseBand Video

Video S/N	40dB min.
Response Flatness	2dBp-p max.
Chroma Delay	-50ns ± 100nsec

Digital BaseBand Video

Video S/N	50dB min.
Differential Gain	10% max.
Differential Phase	5deg max.
Response Flatness	2dBp-p max.
Chroma Delay	-50ns ± 100nsec
Non-linearity	+/-5% max.

Analog BaseBand Audio

Audio S/N	45dB min.
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Digital BaseBand Audio

Audio S/N	72dB min.
Stereo Channel Separation	60dB min.
Frequency Response	+/-1.0dB max.

Data communication

QPSK Output Frequency (Up stream)	8 to 26.5MHz
QPSK Output level (Up stream)	+55 dBmV min.
QPSK Input Frequency (Down stream)	70~130MHz
QPSK Input Level (Down stream)	-16 to +15 dBmV
Smart Card	ISO7816
Digital Audio	IEC958
Serial Port	UART
USB	V1.0

General

Safty Requirement	UL Approved (UL1409)
AC Input	AC120V/60Hz
Power Consumption	30W
Dimension	380 (W) × 303 (D) × 68 (H) mm
Weight	4Kg (Without Package)

Note : Specification and the desine is subject to possible modification without notice due to improvement.